

SDS & MSDS for SILVERWOOD LANDSCAPE

FERTILIZERS

1	13-13-13 NPK Fertilizer	SDS
2	13-5-8 Palm Plus (Best)	SDS
3	14-14-14 Landscape Color (Best)	SDS
4	15-15-15 Triple Pro (Best)	SDS
5	18-9-18 palm food (GrowMore & Sierraform)	SDS
6	20-20-20 (GrowMore)	SDS
7	2-in-1 Systemic Rose & Flower Care (Bayer Advanced)	MSDS
8	Agriform Planting Tablets 20-10-5 (Best)	SDS
9	Ammonium Phosphate 16-20-0 (Agropell)	SDS
10	Ammonium Sulfate 21-0-0 (Simplot)	SDS
11	Atrimmec	SDS
12	Calcium Nitrate 15.5-0-0	SDS
13	Dolomite Calcium Magnesium Carbonate	SDS
14	Essential Plus	MSDS
15	EverGreen 18-5-0 (Best)	SDS
16	Gro-Power 5-3-1	MSDS
17	K-Mag 0-0-22	SDS
18	Nitra King 19-4-4 (Best)	SDS
19	Nitra King 21-2-4 (Best)	SDS
20	Plant Success Grannular	SDS
21	Plant Success Soluble	SDS
22	Proline 6-24-24XB (Best)	SDS
23	Sulfate of Potash (fine) 0-0-50	SDS
24	Super Iron Minis 9-9-9 (Best)	SDS
25	Super Turf 25-5-5 (Best)	SDS
26	Superthrive Plant Food	SDS
27	Triple Superphosphate 0-45-0 (Best)	SDS
28	Triple Twelve 12-12-12	SDS
29	Turf Gold 22-5-6 (Best)	SDS
30	Turf Royal 12-7-14	SDS
31	Turf Supreme 16-6-8 Plus Trimec (Best)	SDS
32	X-Cote 43-0-0 (Best)	SDS
	FUNGICIDES	
33	All-in-One Rose & Flower Care Granules (Bayer Advanced)	MSDS
34	Bordeaux Mixture (Cuprofix Disperss)	MSDS
35	Bordeaux Mixture (Cuprofix Ultra 40 Disperss)	SDS
36	Chipco Aliette	SDS
37	Daconil Action	SDS
38	Disease Control for Roses, Flowers & Shrubs Concentrate (Bayer Advanced)	MSDS
39	Fungi-Fight (Monterey)	SDS
40	Fungus Control for Lawns, Ready to Spray (Bayer Advanced)	MSDS
41	Fungus Control for Lawns, Ready to Spread (Bayer Advanced)	MSDS
42	Heritage Fungicide	SDS
43	Jump Start wettable powder	MSDS
44	Mycorrcin	SDS

SDS & MSDS for SILVERWOOD LANDSCAPE

45	Subdue Maxx	SDS
	HERBICIDES	
46	Broadleaf Weed Killer	SDS
47	Cool Power Herbicide	SDS
48	Diquat/Reward	SDS
49	Fusilade II Turf & Ornamental	SDS
50	Q-4 Turf Herbicide	SDS
51	Ronstar G Herbicide	SDS
52	RoundUp ProMAX	SDS
53	Snapshot 2.5 TG Herbicide	SDS
54	Turflon* Ester Herbicide	SDS
55	Wipe Out Crabgrass Killer (Greenlight)	MSDS
	INSECTICIDES	
56	Bifen I/T Insecticide	SDS
57	Bifethrin 7.9 termiticide/Insecticide/MasterLine	SDS
58	Dimethoate 400	SDS
59	Malathion	SDS
60	Mallet Insecticide 75 WSP-same as Merit 75	SDS
61	Merit 75WP	SDS
62	Natria Insecticidal soap (Bayer)	SDS
63	Orthene 97	SDS
64	Sevin Concentrate	SDS
65	Talstar Professional	SDS
66	Talstar Select	SDS
67	Termidor (termicide)	SDS
68	Triact 70	SDS
69	Tristar	SDS
	PESTICIDES	
70	3336 F	SDS
71	3336 WP	SDS
72	Deer off	SDS
73	Metaldehyde Gran 7.5%	SDS
74	Poison Peanuts Mole & Gopher Bait	SDS
75	Sluggo Snail Bait	SDS
	OTHER	
76	Blazon Blue Spray.	SDS
77	Christy Purple Primer	SDS
78	EZ Wet Soil Penetrant	SDS
79	Mark-It Blue	MSDS
80	Nature's Own Spray Helper (Monterey)	MSDS
81	Summit Year Round Spray Oil	SDS
82	Weld-On 795 Low VOC PVC Plastic Pipe Cement	SDS
83	Weld-On P-70 Primer for PVC and CPVC Plastic Pipe	SDS

13-13-13 NPK Fertilizer

SAFETY DATA SHEET (SDS)

OSHA Haz Com Standard 29 CFR 1910.1200. Prepared to GHS Rev03.




United Suppliers Inc.

SECTION 1: Identification

- 1.1. Product identifier
Product Form : Solid Granule
Product Name: : 13-13-13
- 1.2. Recommended use / restrictions of use
: Agricultural fertilizer. No restrictions.
- 1.3. Details of the supplier of the data sheet
: United Suppliers Inc.
Henry, IL 61537
T 1-309-364-2361
- 1.4. Emergency telephone number
Emergency number : CHEMTREC 1-800-424-9300

SECTION 2: Hazards Identification

- 2.1. Classification of the substance or mixture
: Skin irritant (H315), eye irritant (H320), respiratory irritant (H335)
- 2.2. Label elements
Hazard pictograms  GHS07
- Signal word : Warning
- Hazard statements : H315 – Causes skin irritation
H320 – Causes eye irritation
H335 – May cause respiratory irritation
- Precautionary statements : P280 – Wear protective gloves/eye protection
P305+P351 – If in eyes: Rinse cautiously with water for several minutes
P337+P313 – If eye irritation persists: Get medical advice/attention
- 2.3. Other hazards
: No additional hazards
- 2.4. Unknown acute toxicity
: No data available

SECTION 3: Composition/information on ingredients

- 3.1. Substance

Ingredient name	Product identifier (CAS No.)	%
Ammonium Sulfate	7783-20-2	40 - 50
Monoammonium Phosphate	7722-76-1	25 - 30
Potassium Chloride (Muriate of Potash)	7447-40-7	20 - 22
Silicon Dioxide	14808-60-7	4 - 5

- 3.2. Mixture
: Not applicable

13-13-13 NPK Fertilizer

SAFETY DATA SHEET (SDS)

OSHA Haz Com Standard 29 CFR 1910.1200. Prepared to GHS Rev03.



United Suppliers Inc.

SECTION 4: First aid measures

4.1. Description of first aid measures

- First-aid measures after inhalation : Remove to fresh air and keep at rest in a comfortable position for breathing. If irritation persists, seek medical attention.
- First-aid measures after skin contact : Wash with water and soap. If irritation persists, seek medical attention.
- First-aid measures after eye contact : Flush eyes with running water for several minutes. If irritation persists, seek medical attention.
- First-aid measures after ingestion : Give large amounts of water. If irritation persists, seek medical attention.

4.2. Most important symptoms and effects, both acute and delayed

- Symptoms/injuries after inhalation : May cause respiratory irritation.
- Symptoms/injuries after skin contact : Causes skin irritation.
- Symptoms/injuries after eye contact : Causes eye irritation.

4.3. Indication of any immediate medical attention and special treatment needed

No additional information available

SECTION 5: Firefighting measures

5.1. Extinguishing media

- Suitable extinguishing media : Water spray, dry chemical, carbon dioxide, sand.
- Unsuitable extinguishing media : None.

5.2. Special hazards arising from the substance or mixture

: Material will not burn: However, material undergoes decomposition at elevated temperatures to release toxic and combustible gases.

5.3. Advice for firefighters

- Firefighting instructions : Material will not burn. Use extinguishing media appropriate for the surrounding materials.
- Protection during firefighting : Wear respiratory protection.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment, and emergency procedures

- Protective equipment : Wear gloves and cover skin.
- Emergency procedures : None required.

6.2. Environmental precautions

: Prevent entry to sewers and public surface waters.

6.3. Methods and material for containment and cleaning up

- Clean-up methods : Use mechanical means. Store material in suitable containers for recycle/disposal.

6.4. Reference to other sections

: See Section 7 for safe handling information.
See Section 8 for PPE information.
See Section 13 for disposal information.

13-13-13 NPK Fertilizer

SAFETY DATA SHEET (SDS)

OSHA Haz Com Standard 29 CFR 1910.1200. Prepared to GHS Rev03.



United Suppliers Inc.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Safe handling precautions : Avoid contact with skin and eyes. After handling, wash hands thoroughly with soap and water. Avoid breathing dust. Wash before eating and drinking.

Fire/explosion precautions : No special measures required.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions : Store in a dry, cool, and well-ventilated area. Protect from weather.

Incompatible materials : Slightly reactive with oxidizing agents, metals, alkalis, and moisture.

7.3. Specific end use(s)

: No further relevant information available.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

ACGIH Threshold Limit Value : 10 mg/m³ as inhalable dust.

OSHA Permissible Exposure Limit : Not established.

8.2. Exposure controls

Appropriate engineering controls : If dust is generated during handling, use adequate ventilation to keep exposure to airborne dust level below the threshold limits.

Personal protective equipment : Hand, skin, eye, respiratory (if needed).

Hand protection : Wear protective gloves. Glove material: Any.

Eye protection : Safety glasses w/ side shields.

Skin and body protection : Wear long sleeved clothing and other suitable clothing to prevent skin exposure.

Respiratory protection : Wear NIOSH approved dust respirator if dust level is above threshold limit.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	: Solid granule	Flammability	: Not flammable
Color	: Black / dark gray	Flash point	: Not applicable
Odor	: Slight phosphate	Explosive limit (upper)	: No data available
Odor threshold	: 17 ppm (Ammonia)	Explosive limit (lower)	: No data available
Boiling point	: Decomposes	Auto ignition temp.	: No data available
Melting point	: 155°C (311°F)	Decomposition temp.	: No data available
Freezing point	: No data available	Partition coefficient	: No data available
Vapor pressure	: Not applicable	Viscosity, kinematic	: Not applicable
Vapor density	: Not applicable	Viscosity, dynamic	: Not applicable
pH	: 5.6		
Specific gravity	: 1.03		
Bulk density	: 64 lbs/ft ³		
Solubility	: Soluble in water		
Evaporation rate	: Not applicable		

9.2. Other information

: No further information available.

13-13-13 NPK Fertilizer

SAFETY DATA SHEET (SDS)

OSHA Haz Com Standard 29 CFR 1910.1200. Prepared to GHS Rev03.



United Suppliers Inc.

SECTION 10: Stability and reactivity

- 10.1. Reactivity : No further relevant information available.
- 10.2. Chemical stability : The product is stable under normal ambient conditions.
- 10.3. Possibility of hazardous reactions : None.
- 10.4. Conditions to avoid : No further relevant information available.
- 10.5. Incompatible materials : Slightly reactive with oxidizing agents, metals, alkalis, and moisture.
- 10.6. Hazardous decomposition products : Avoid contact with moisture – slow hydrolysis will produce corrosive acids.

SECTION 11: Toxicological information

- 11.1. Information on toxicological effects
- Routes of exposure : Skin contact, eye contact, inhalation, ingestion.
- Skin corrosion/irritation : Causes skin irritation.
- Eye damage/irritation : Causes eye irritation.
- Acute toxicity : Not classified.
- Carcinogenicity : Not classified.
- Reproductive toxicity : Not classified.
- LD50 oral rat : 3000 mg/kg (Rat)
- Symptoms/injuries after skin contact : Causes skin irritation.
- Symptoms/injuries after eye contact : Causes eye irritation.
- Symptoms/injuries after inhalation : May cause respiratory irritation.
- NTP (*National Toxicology Program*) : Substance is not listed.
- IARC (*International Agency for Research on Cancer*) : Substance is not listed.

SECTION 12: Ecological information

- 12.1. Toxicity : No testing data available.
- 12.2. Persistence and degradability : Aquatic toxicity: will release ammonium ions in water by hydrolysis. Ammonia is toxic to aquatic organisms. Avoid spills/releases to surface waters.
- 12.3. Bioaccumulative potential : No data available.
- 12.4. Mobility in soil : Non-persistent when applied using normal agricultural practices.
- 12.5. Other adverse effects : No further relevant information available.

13-13-13 NPK Fertilizer

SAFETY DATA SHEET (SDS)

OSHA Haz Com Standard 29 CFR 1910.1200. Prepared to GHS Rev03.



United Suppliers Inc.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Waste disposal recommendations : Recycle excess product if at all possible. Avoid sewage and landfill disposal.

Waste containers : Do not use metal waste containers.

13.2. Reference to other sections

: See Section 8 for exposure control information.

SECTION 14: Transport information

14.1. Transport information

UN-Number : None

DOT, ADR, ADN, IATA, IMDG : Non-regulated material

UN proper shipping name : Not regulated for transportation

Transport hazard class : Not regulated

Class – DOT, ADR, ADN, IATA, IMDG : Non-regulated material

Packing group – DOT, ADR, IMDG, IATA : Non-regulated material

Environmental hazards: Marine pollutant IMDG : Not classified as a marine pollutant

Transport in bulk according to Annex II of MARPOL 73/78 and IBC code : Not applicable

Special precautions for user : None

SECTION 15: Regulatory information

15.1. US Federal regulations

SARA 302 (EHS) : Product is not listed.

SARA 311-312 (Tier II) : Product is not listed.

SARA 313 (TRI) : Product is not listed.

15.2. International regulations

Canada : Product is listed on Domestic Substances List.

European Union : Product is not listed.

15.3. US State regulations

: None.

SECTION 16: Other information

16.1. Other information

Date of preparation/last revised : 11/14/2014

For further health, safety, or environmental information on this product, contact : United Suppliers Inc.
Loss Control Dept.
T 1-641-858-2341

Disclaimer: The information provided in this Safety Data Sheet is correct to the best of our knowledge and belief at the date of its publication. The information is designed only as guidance for safe handling, use, storage, transportation, and disposal, and is not to be considered a warranty (express, implied, merchantability or fitness for any particular purpose) or quality specification. The information relates only to the specific material designated therein.



Best Palm Plus 13-5-8

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Product form : Mixture
Product name : Best Palm Plus 13-5-8
Product code : M74167

1.2. Relevant identified uses of the substance or mixture and uses advised against

1.3. Details of the supplier of the safety data sheet

JR Simplot Company
Boise, ID 83707
T 1-208-336-2110

1.4. Emergency telephone number

Emergency number : CHEMTREC 1-800-424-9300

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification (GHS-US)

Skin Irrit. 2 H315
Eye Irrit. 2B H320
STOT SE 3 H335

Full text of H-phrases: see section 16

2.2. Label elements

GHS-US labeling

Hazard pictograms (GHS-US) :



GHS07

Signal word (GHS-US) :

Warning

Hazard statements (GHS-US) :

H315 - Causes skin irritation
H320 - Causes eye irritation
H335 - May cause respiratory irritation

Precautionary statements (GHS-US) :

P261 - Avoid breathing dust/fume/gas/mist/vapors/spray
P264 - Wash ... thoroughly after handling
P271 - Use only outdoors or in a well-ventilated area
P280 - Wear protective gloves/protective clothing/eye protection/face protection
P302+P352 - If on skin: Wash with plenty of water/...
P304+P340 - If inhaled: Remove person to fresh air and keep comfortable for breathing
P305+P351+P338 - If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P312 - Call a poison center/doctor/... if you feel unwell
P321 - Specific treatment (see ... on this label)
P332+P313 - If skin irritation occurs: Get medical advice/attention
P337+P313 - If eye irritation persists: Get medical advice/attention
P362 - Take off contaminated clothing and wash before reuse
P403+P233 - Store in a well-ventilated place. Keep container tightly closed
P405 - Store locked up
P501 - Dispose of contents/container to ...

2.3. Other hazards

No additional information available

2.4. Unknown acute toxicity (GHS-US)

No data available

Best Palm Plus 13-5-8

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SECTION 3: Composition/information on ingredients

3.1. Substance

Not applicable

3.2. Mixture

Name	Product identifier	%	Classification (GHS-US)
potassium sulfate	(CAS No) 7778-80-5		Not classified
urea	(CAS No) 57-13-6		Skin Irrit. 2, H315 Eye Irrit. 2B, H320 STOT SE 3, H335
dolomite	(CAS No) 16389-88-1		Eye Irrit. 2B, H320
ammonium sulfate	(CAS No) 7783-20-2		Eye Irrit. 2B, H320 STOT SE 3, H335
Monoammonium Phosphate	(CAS No) 7722-76-1		Eye Irrit. 2B, H320 STOT SE 3, H335
Polymer Coating			Not classified
Pacmix	(CAS No) None		Skin Irrit. 2, H315 Eye Irrit. 2B, H320 STOT SE 3, H335
Manganese Sucrate			Not classified
potassium chloride	(CAS No) 7447-40-7		Not classified
Iron Oxysulfate			Eye Irrit. 2B, H320
Sand			STOT SE 3, H335
Manganese Oxysulfate			Eye Irrit. 2B, H320
Wax	(CAS No) 64771-72-8		Not classified
diatomaceous earth	(CAS No) 61790-53-2		Eye Irrit. 2B, H320 STOT SE 3, H335

SECTION 4: First aid measures

4.1. Description of first aid measures

- First-aid measures general : Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label where possible).
- First-aid measures after inhalation : Assure fresh air breathing. Allow the victim to rest.
- First-aid measures after skin contact : Remove affected clothing and wash all exposed skin area with mild soap and water, followed by warm water rinse.
- First-aid measures after eye contact : Rinse immediately with plenty of water. Obtain medical attention if pain, blinking or redness persist.
- First-aid measures after ingestion : Rinse mouth. Do NOT induce vomiting. Obtain emergency medical attention.

4.2. Most important symptoms and effects, both acute and delayed

- Symptoms/injuries : Not expected to present a significant hazard under anticipated conditions of normal use.

4.3. Indication of any immediate medical attention and special treatment needed

No additional information available

SECTION 5: Firefighting measures

5.1. Extinguishing media

- Suitable extinguishing media : Foam. Dry powder. Carbon dioxide. Water spray. Sand.
- Unsuitable extinguishing media : Do not use a heavy water stream.

5.2. Special hazards arising from the substance or mixture

No additional information available

5.3. Advice for firefighters

- Firefighting instructions : Use water spray or fog for cooling exposed containers. Exercise caution when fighting any chemical fire. Prevent fire-fighting water from entering environment.
- Protection during firefighting : Do not enter fire area without proper protective equipment, including respiratory protection.

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SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

Emergency procedures : Evacuate unnecessary personnel.

6.1.2. For emergency responders

Protective equipment : Equip cleanup crew with proper protection.

Emergency procedures : Ventilate area.

6.2. Environmental precautions

Prevent entry to sewers and public waters. Notify authorities if liquid enters sewers or public waters.

6.3. Methods and material for containment and cleaning up

Methods for cleaning up : On land, sweep or shovel into suitable containers. Minimize generation of dust. Store away from other materials.

6.4. Reference to other sections

See Heading 8. Exposure controls and personal protection.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling : Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Provide good ventilation in process area to prevent formation of vapor.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions : Keep only in the original container in a cool, well ventilated place away from : Keep container closed when not in use.

Incompatible products : Strong bases. Strong acids.

Incompatible materials : Sources of ignition. Direct sunlight.

7.3. Specific end use(s)

No additional information available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

dolomite (16389-88-1)		
USA ACGIH	ACGIH TWA (mg/m ³)	3 mg/m ³

8.2. Exposure controls

Personal protective equipment : Avoid all unnecessary exposure.

Hand protection : Wear protective gloves.

Eye protection : Chemical goggles or safety glasses.

Respiratory protection : Wear appropriate mask.

Other information : Do not eat, drink or smoke during use.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state : Solid

Appearance : Multicolored granules.

Color : Colorless

Odor : characteristic

Odor threshold : No data available

pH : No data available

Relative evaporation rate (butyl acetate=1) : No data available

Melting point : No data available

Freezing point : No data available

Boiling point : No data available

Flash point : No data available

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Auto-ignition temperature	: No data available
Decomposition temperature	: No data available
Flammability (solid, gas)	: No data available
Vapor pressure	: No data available
Relative vapor density at 20 °C	: No data available
Relative density	: No data available
Density	: 62 - 63 lbs/ft ³
Solubility	: Slowly soluble, coating insoluble. Water: Solubility in water of component(s) of the mixture : •: 100 g/100ml •: 77 g/100ml •: 38 g/100ml •: 34 g/100ml •: 11 g/100ml •: 0.0078 g/100ml •:
Log Pow	: No data available
Log Kow	: No data available
Viscosity, kinematic	: No data available
Viscosity, dynamic	: No data available
Explosive properties	: No data available
Oxidizing properties	: No data available
Explosive limits	: No data available

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

No additional information available

10.2. Chemical stability

Stable. Not established.

10.3. Possibility of hazardous reactions

Not established.

10.4. Conditions to avoid

Extremely high temperatures. Direct sunlight. Extremely high or low temperatures.

10.5. Incompatible materials

Oxidizing agent. Prolonged contact may cause oxidation of unprotected metals. Strong acids. Strong bases.

10.6. Hazardous decomposition products

During high temperature in fire conditions. The product may reach melting point and decompose to release NH₃, SO_x, PO_x, or CN. fume. Carbon monoxide. Carbon dioxide.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity : Not classified

urea (57-13-6)	
LD50 oral rat	8471 mg/kg (Rat)
LD50 dermal rat	> 3200 mg/kg (Rat)
LD50 dermal rabbit	> 21000 mg/kg (Rabbit)
ATE US (oral)	8471.00000000 mg/kg body weight

ammonium sulfate (7783-20-2)	
LD50 oral rat	2840 mg/kg (Rat)
LD50 dermal rat	> 2000 mg/kg
ATE US (oral)	2840.00000000 mg/kg body weight

Monoammonium Phosphate (7722-76-1)	
LD50 oral rat	5750 mg/kg (Rat)
LD50 dermal rat	> mg/kg
LD50 dermal rabbit	> 7940 mg/kg (Rabbit)

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Monoammonium Phosphate (7722-76-1)	
ATE US (oral)	5750.00000000 mg/kg body weight

potassium sulfate (7778-80-5)	
LD50 oral rat	6600 mg/kg (Rat)
ATE US (oral)	6600.00000000 mg/kg body weight

potassium chloride (7447-40-7)	
LD50 oral rat	2600 mg/kg (Rat)
ATE US (oral)	2600.00000000 mg/kg body weight

Manganese Oxysulfate	
LD50 oral rat	2150 mg/kg
ATE US (oral)	2150.00000000 mg/kg body weight

Skin corrosion/irritation : Causes skin irritation.
 Serious eye damage/irritation : Causes eye irritation.
 Respiratory or skin sensitization : Not classified
 Germ cell mutagenicity : Not classified
 Based on available data, the classification criteria are not met
 Carcinogenicity : Not classified

diatomaceous earth (61790-53-2)	
IARC group	3 - Not classifiable

Reproductive toxicity : Not classified
 Based on available data, the classification criteria are not met
 Specific target organ toxicity (single exposure) : May cause respiratory irritation.
 Specific target organ toxicity (repeated exposure) : Not classified
 Based on available data, the classification criteria are not met
 Aspiration hazard : Not classified
 Based on available data, the classification criteria are not met
 Potential Adverse human health effects and symptoms : Based on available data, the classification criteria are not met.

SECTION 12: Ecological information

12.1. Toxicity

urea (57-13-6)	
LC50 fish 1	> 6810 mg/l (96 h; Leuciscus idus)
EC50 Daphnia 1	> 10000 mg/l (48 h; Daphnia magna)
LC50 fish 2	17500 mg/l (96 h; Poecilia reticulata)
EC50 Daphnia 2	> 10000 mg/l (24 h; Daphnia magna)
TLM fish 1	17500 ppm (96 h; Poecilia reticulata)
Threshold limit other aquatic organisms 1	120000 mg/l (16 h; Bacteria; Toxicity test)
Threshold limit other aquatic organisms 2	> 10000 mg/l (Pseudomonas putida)
Threshold limit algae 2	> 10000 mg/l (168 h; Scenedesmus quadricauda)

ammonium sulfate (7783-20-2)	
LC50 fish 1	126 mg/l (96 h; Poecilia reticulata)
EC50 Daphnia 1	202 mg/l (96 h; Daphnia magna)
LC50 fish 2	250 - 480 mg/l (96 h; Brachydanio rerio)
EC50 Daphnia 2	433 mg/l (50 h; Daphnia magna)
TLM fish 1	1290 ppm (96 h; Gambusia affinis)

Monoammonium Phosphate (7722-76-1)	
LC50 fish 1	155 ppm (96 h; Pimephales promelas)

potassium sulfate (7778-80-5)	
LC50 fish 1	1692.4 mg/l (96 h; Alburnus alburnus)

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potassium sulfate (7778-80-5)	
LC50 other aquatic organisms 1	> 1000 mg/l (96 h)
EC50 Daphnia 1	890 mg/l (48 h; Daphnia magna; Static system)
LC50 fish 2	653 - 796 mg/l (96 h; Lepomis macrochirus)
EC50 Daphnia 2	1180 mg/l (96 h; Crustacea)
TLM fish 1	3550 ppm (96 h; Lepomis sp.)
Threshold limit other aquatic organisms 1	> 1000 mg/l (96 h)
Threshold limit algae 1	2900 mg/l (72 h; Scenedesmus subspicatus)

potassium chloride (7447-40-7)	
LC50 fish 1	920 mg/l (96 h; Gambusia affinis; Static system)
EC50 Daphnia 1	630 mg/l (48 h; Ceriodaphnia dubia)
LC50 fish 2	2010 mg/l (96 h; Lepomis macrochirus; Static system)
EC50 Daphnia 2	660 mg/l (48 h; Daphnia magna)
Threshold limit algae 1	850 mg/l (72 h; Scenedesmus subspicatus)
Threshold limit algae 2	> 100 mg/l (72 h; Scenedesmus subspicatus; GLP)

12.2. Persistence and degradability

Best Palm Plus 13-5-8	
Persistence and degradability	Not established.

urea (57-13-6)	
Persistence and degradability	Inherently biodegradable. Hydrolysis in water. Not established.
ThOD	0.27 g O ₂ /g substance

ammonium sulfate (7783-20-2)	
Persistence and degradability	Biodegradability in water: no data available. Not established.

Monoammonium Phosphate (7722-76-1)	
Persistence and degradability	Biodegradability in water: no data available. Not established.

potassium sulfate (7778-80-5)	
Persistence and degradability	Biodegradability: not applicable. Not established.
Biochemical oxygen demand (BOD)	Not applicable
Chemical oxygen demand (COD)	Not applicable
ThOD	Not applicable
BOD (% of ThOD)	Not applicable

Iron Oxysulfate	
Persistence and degradability	Not established.

potassium chloride (7447-40-7)	
Persistence and degradability	Biodegradability: not applicable. Not established.
Biochemical oxygen demand (BOD)	Not applicable
Chemical oxygen demand (COD)	Not applicable
ThOD	Not applicable
BOD (% of ThOD)	Not applicable

Wax (64771-72-8)	
Persistence and degradability	Not established.

Pacmix (None)	
Persistence and degradability	Not established.

Sand	
Persistence and degradability	Not established.

dolomite (16389-88-1)	
Persistence and degradability	Biodegradability: not applicable. Not established.
Biochemical oxygen demand (BOD)	Not applicable
Chemical oxygen demand (COD)	Not applicable
ThOD	Not applicable
BOD (% of ThOD)	Not applicable

Best Palm Plus 13-5-8

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diatomaceous earth (61790-53-2)	
Persistence and degradability	Biodegradability: not applicable. Not established.
Biochemical oxygen demand (BOD)	Not applicable
Chemical oxygen demand (COD)	Not applicable
ThOD	Not applicable
BOD (% of ThOD)	Not applicable

Manganese Sulfate	
Persistence and degradability	Not established.

12.3. Bioaccumulative potential

Best Palm Plus 13-5-8	
Bioaccumulative potential	Not established.

urea (57-13-6)	
BCF fish 1	1 (72 h; Brachydanio rerio; Fresh water)
BCF other aquatic organisms 1	11700 (Chlorella sp.)
Log Pow	-2.59 - -1.59
Bioaccumulative potential	Bioaccumulation: not applicable. Not established.

ammonium sulfate (7783-20-2)	
Log Pow	-5.1
Bioaccumulative potential	Bioaccumulation: not applicable. Not established.

Monoammonium Phosphate (7722-76-1)	
Bioaccumulative potential	Not bioaccumulative. Not established.

potassium sulfate (7778-80-5)	
Bioaccumulative potential	Not bioaccumulative. Not established.

Iron Oxysulfate	
Bioaccumulative potential	Not established.

potassium chloride (7447-40-7)	
Log Pow	-0.46 (Estimated value)
Bioaccumulative potential	Bioaccumulation: not applicable. Not established.

Wax (64771-72-8)	
Bioaccumulative potential	Not established.

Pacmix (None)	
Bioaccumulative potential	Not established.

Sand	
Bioaccumulative potential	Not established.

dolomite (16389-88-1)	
Bioaccumulative potential	No bioaccumulation data available. Not established.

diatomaceous earth (61790-53-2)	
Bioaccumulative potential	No bioaccumulation data available. Not established.

Manganese Sulfate	
Bioaccumulative potential	Not established.

12.4. Mobility in soil

No additional information available

12.5. Other adverse effects

Effect on ozone layer : No additional information available
 Effect on the global warming : No known ecological damage caused by this product.
 Other information : Avoid release to the environment.

Best Palm Plus 13-5-8

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SECTION 13: Disposal considerations

13.1. Waste treatment methods

Waste disposal recommendations : Dispose in a safe manner in accordance with local/national regulations.
Ecology - waste materials : Avoid release to the environment.

SECTION 14: Transport information

In accordance with DOT
Not regulated for transport

Additional information

Other information : No supplementary information available.

ADR

Transport document description :

Transport by sea

No additional information available

Air transport

No additional information available

SECTION 15: Regulatory information

15.1. US Federal regulations

Best Palm Plus 13-5-8		
Not listed on the United States TSCA (Toxic Substances Control Act) inventory		
All components of this product are listed on the Toxic Substances Control Act (TSCA) inventory except for:		
Iron Oxysulfate	CAS No	C>=1.00% ; C<=5.00%
Polymer Coating	CAS No	C>=5.00% ; C<=12.00%
Pacmix	CAS No None	C>=3.00% ; C<=10.00%
Manganese Oxysulfate	CAS No	C>=0.10% ; C<=0.50%
Sand	CAS No	C>=0.50% ; C<=0.90%
Manganese Sucrate	CAS No	C>=5.00% ; C<=10.00%

This product or mixture does not contain a toxic chemical or chemicals in excess of the applicable de minimis concentration as specified in 40 CFR §372.38(a) subject to the reporting requirements of section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372.

Iron Oxysulfate
Not listed on the United States TSCA (Toxic Substances Control Act) inventory
Sand
Not listed on the United States TSCA (Toxic Substances Control Act) inventory
Manganese Sucrate
Not listed on the United States TSCA (Toxic Substances Control Act) inventory

15.2. International regulations

CANADA

No additional information available

EU-Regulations

No additional information available

Classification according to Regulation (EC) No. 1272/2008 [CLP]

Classification according to Directive 67/548/EEC or 1999/45/EC

Not classified

15.2.2. National regulations

No additional information available

Best Palm Plus 13-5-8

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15.3. US State regulations

diatomaceous earth (61790-53-2)

U.S. - New Jersey - Right to Know Hazardous Substance List

SECTION 16: Other information

Data sources

:
: REGULATION (EC) No 1272/2008 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 16 December 2008 on classification, labeling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006.

Other information

: None.

Full text of H-phrases: see section 16:

Eye Irrit. 2B	Serious eye damage/eye irritation Category 2B
Skin Irrit. 2	Skin corrosion/irritation Category 2
STOT SE 3	Specific target organ toxicity (single exposure) Category 3
H315	Causes skin irritation
H320	Causes eye irritation
H335	May cause respiratory irritation

SDS US (GHS HazCom 2012)

Disclaimer: This information relates to the specific material designated and may not be valid for such material used in combination with any other materials or in any process. Such information is to the best of our knowledge and belief, accurate and reliable as of the date compiled. However, no representation, warranty or guarantee is made as to its accuracy, reliability or completeness. NO WARRANTY OF MERCHANTABILITY, FITNESS FOR ANY PARTICULAR PURPOSE, OR ANY OTHER WARRANTY, EXPRESS OR IMPLIED, IS MADE CONCERNING THE INFORMATION HEREIN PROVIDED. It is the user's responsibility to satisfy himself as to the suitability and completeness of such information for his own particular use. We do not accept liability for any loss or damage that may occur from the use of this information nor do we offer warranty against patent infringement.



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SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Product form : Mixture
Product name : Best 14-14-14 Landscape Color
Product code : M74160

1.2. Relevant identified uses of the substance or mixture and uses advised against

1.3. Details of the supplier of the safety data sheet

JR Simplot Company
P.O. Box 70013
Boise, ID 83707
T 1-208-336-2110

1.4. Emergency telephone number

Emergency number : CHEMTREC 1-800-424-9300

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification (GHS-US)

Skin Irrit. 2 H315
Eye Irrit. 2B H320
STOT SE 3 H335

Full text of H-phrases: see section 16

2.2. Label elements

GHS-US labeling

Hazard pictograms (GHS-US) :



GHS07

Signal word (GHS-US) :

Warning

Hazard statements (GHS-US) :

H315 - Causes skin irritation
H320 - Causes eye irritation
H335 - May cause respiratory irritation

Precautionary statements (GHS-US) :

P261 - Avoid breathing dust/fume/gas/mist/vapors/spray
P264 - Wash ... thoroughly after handling
P271 - Use only outdoors or in a well-ventilated area
P280 - Wear protective gloves/protective clothing/eye protection/face protection
P302+P352 - If on skin: Wash with plenty of water/...
P304+P340 - If inhaled: Remove person to fresh air and keep comfortable for breathing
P305+P351+P338 - If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P312 - Call a poison center/doctor/... if you feel unwell
P321 - Specific treatment (see ... on this label)
P332+P313 - If skin irritation occurs: Get medical advice/attention
P337+P313 - If eye irritation persists: Get medical advice/attention
P362 - Take off contaminated clothing and wash before reuse
P403+P233 - Store in a well-ventilated place. Keep container tightly closed
P405 - Store locked up
P501 - Dispose of contents/container to ... in accordance with local/regional/national regulations

2.3. Other hazards

No additional information available

2.4. Unknown acute toxicity (GHS-US)

Not applicable

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SECTION 3: Composition/information on ingredients

3.1. Substance

Not applicable

3.2. Mixture

Name	Product identifier	%	Classification (GHS-US)
Monoammonium Phosphate	(CAS No) 7722-76-1		Eye Irrit. 2B, H320 STOT SE 3, H335
urea	(CAS No) 57-13-6		Skin Irrit. 2, H315 Eye Irrit. 2B, H320 STOT SE 3, H335
potassium chloride	(CAS No) 7447-40-7		Not classified
potassium sulfate	(CAS No) 7778-80-5		Not classified
ammonium sulfate	(CAS No) 7783-20-2		Not classified
Pacmix	(CAS No) None		Skin Irrit. 2, H315 Eye Irrit. 2B, H320 STOT SE 3, H335
Sand			STOT SE 3, H335
Polymer Coating			Not classified
Iron Oxyulfate			Eye Irrit. 2B, H320
Wax	(CAS No) 64771-72-8		Not classified

Full text of H-phrases: see section 16

SECTION 4: First aid measures

4.1. Description of first aid measures

- First-aid measures general : Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label where possible).
- First-aid measures after inhalation : Allow victim to breathe fresh air. Allow the victim to rest.
- First-aid measures after skin contact : Remove affected clothing and wash all exposed skin area with mild soap and water, followed by warm water rinse.
- First-aid measures after eye contact : Rinse immediately with plenty of water. Obtain medical attention if pain, blinking or redness persist.
- First-aid measures after ingestion : Rinse mouth. Do NOT induce vomiting. Obtain emergency medical attention.

4.2. Most important symptoms and effects, both acute and delayed

- Symptoms/injuries : Not expected to present a significant hazard under anticipated conditions of normal use.

4.3. Indication of any immediate medical attention and special treatment needed

No additional information available

SECTION 5: Firefighting measures

5.1. Extinguishing media

- Suitable extinguishing media : Foam. Dry powder. Carbon dioxide. Water spray. Sand.
- Unsuitable extinguishing media : Do not use a heavy water stream.

5.2. Special hazards arising from the substance or mixture

No additional information available

5.3. Advice for firefighters

- Firefighting instructions : Use water spray or fog for cooling exposed containers. Exercise caution when fighting any chemical fire. Prevent fire-fighting water from entering environment.
- Protection during firefighting : Do not enter fire area without proper protective equipment, including respiratory protection.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

- Emergency procedures : Evacuate unnecessary personnel.

6.1.2. For emergency responders

- Protective equipment : Equip cleanup crew with proper protection.

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Emergency procedures : Ventilate area.

6.2. Environmental precautions

Prevent entry to sewers and public waters. Notify authorities if liquid enters sewers or public waters.

6.3. Methods and material for containment and cleaning up

Methods for cleaning up : On land, sweep or shovel into suitable containers. Minimize generation of dust. Store away from other materials.

6.4. Reference to other sections

See Heading 8. Exposure controls and personal protection.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling : Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Provide good ventilation in process area to prevent formation of vapor.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions : Keep only in the original container in a cool, well ventilated place away from : Keep container closed when not in use.

Incompatible products : Strong bases. Strong acids.

Incompatible materials : Sources of ignition. Direct sunlight.

7.3. Specific end use(s)

No additional information available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Best 14-14-14 Landscape Color	
ACGIH	Not applicable
OSHA	Not applicable
urea (57-13-6)	
ACGIH	Not applicable
OSHA	Not applicable
ammonium sulfate (7783-20-2)	
ACGIH	Not applicable
OSHA	Not applicable
Monoammonium Phosphate (7722-76-1)	
ACGIH	Not applicable
OSHA	Not applicable
potassium chloride (7447-40-7)	
ACGIH	Not applicable
OSHA	Not applicable
potassium sulfate (7778-80-5)	
ACGIH	Not applicable
OSHA	Not applicable
Iron Oxysulfate	
ACGIH	Not applicable
OSHA	Not applicable
Pacmix (None)	
ACGIH	Not applicable
OSHA	Not applicable

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Sand	
ACGIH	Not applicable
OSHA	Not applicable

Polymer Coating	
ACGIH	Not applicable
OSHA	Not applicable

Wax (64771-72-8)	
ACGIH	Not applicable
OSHA	Not applicable

8.2. Exposure controls

Personal protective equipment : Avoid all unnecessary exposure.

Hand protection : Wear protective gloves.

Eye protection : Chemical goggles or safety glasses.

Respiratory protection : Wear appropriate mask.

Other information : Do not eat, drink or smoke during use.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state : Solid

Appearance : Multicolored granules.

Color : Multi-colored

Odor : characteristic

Odor threshold : No data available

pH : No data available

Melting point : No data available

Freezing point : No data available

Boiling point : No data available

Flash point : No data available

Relative evaporation rate (butyl acetate=1) : No data available

Flammability (solid, gas) : No data available

Explosion limits : No data available

Explosive properties : No data available

Oxidizing properties : No data available

Vapor pressure : No data available

Relative density : No data available

Relative vapor density at 20 °C : No data available

Solubility : Soluble. slowly soluble. Polymer coating insoluble.
Water: Solubility in water of component(s) of the mixture :
•: 100 g/100ml •: 77 g/100ml •: 38 g/100ml •: 34 g/100ml •: 11 g/100ml

Log Pow : No data available

Log Kow : No data available

Auto-ignition temperature : No data available

Decomposition temperature : No data available

Viscosity : No data available

Viscosity, kinematic : No data available

Viscosity, dynamic : No data available

9.2. Other information

No additional information available

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SECTION 10: Stability and reactivity

10.1. Reactivity

No additional information available

10.2. Chemical stability

Not established.

10.3. Possibility of hazardous reactions

Not established.

10.4. Conditions to avoid

Direct sunlight. Extremely high or low temperatures.

10.5. Incompatible materials

Strong acids. Strong bases.

10.6. Hazardous decomposition products

fume. Carbon monoxide. Carbon dioxide.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity : Not classified

urea (57-13-6)	
LD50 oral rat	8471 mg/kg (Rat; OECD 401: Acute Oral Toxicity; Literature study; 14300 mg/kg bodyweight; Rat; Experimental value)
LD50 dermal rat	> 3200 mg/kg (Rat; Literature study)
LD50 dermal rabbit	> 21000 mg/kg (Rabbit; Literature study)
ATE US (oral)	8471.000 mg/kg body weight
ammonium sulfate (7783-20-2)	
LD50 oral rat	2840 mg/kg (Rat)
LD50 dermal rat	> 2000 mg/kg
ATE US (oral)	2840.000 mg/kg body weight
Monoammonium Phosphate (7722-76-1)	
LD50 oral rat	5750 mg/kg (Rat)
LD50 dermal rat	> mg/kg
LD50 dermal rabbit	> 7940 mg/kg (Rabbit)
ATE US (oral)	5750.000 mg/kg body weight
potassium chloride (7447-40-7)	
LD50 oral rat	2600 mg/kg (Rat)
ATE US (oral)	2600.000 mg/kg body weight
potassium sulfate (7778-80-5)	
LD50 oral rat	6600 mg/kg (Rat)
ATE US (oral)	6600.000 mg/kg body weight

Skin corrosion/irritation : Causes skin irritation.
Serious eye damage/irritation : Causes eye irritation.
Respiratory or skin sensitization : Not classified
Germ cell mutagenicity : Not classified
Based on available data, the classification criteria are not met
Carcinogenicity : Not classified
Reproductive toxicity : Not classified
Based on available data, the classification criteria are not met
Specific target organ toxicity (single exposure) : May cause respiratory irritation.

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Specific target organ toxicity (repeated exposure) : Not classified

Aspiration hazard : Not classified

Potential Adverse human health effects and symptoms : Based on available data, the classification criteria are not met.

SECTION 12: Ecological information

12.1. Toxicity

urea (57-13-6)	
LC50 fish 1	> 6810 mg/l (96 h; <i>Leuciscus idus</i> ; Nominal concentration)
EC50 Daphnia 1	> 10000 mg/l (48 h; <i>Daphnia magna</i> ; Nominal concentration)
LC50 fish 2	17500 mg/l (96 h; <i>Poecilia reticulata</i>)
EC50 Daphnia 2	> 10000 mg/l (24 h; <i>Daphnia magna</i>)
TLM fish 1	17500 ppm (96 h; <i>Poecilia reticulata</i>)
Threshold limit other aquatic organisms 1	120000 mg/l (16 h; Bacteria; Toxicity test)
Threshold limit other aquatic organisms 2	> 10000 mg/l (<i>Pseudomonas putida</i>)
Threshold limit algae 1	> 10000 mg/l (168 h; <i>Scenedesmus quadricauda</i> ; Growth rate)
Threshold limit algae 2	47 mg/l (192 h; <i>Microcystis aeruginosa</i> ; Growth rate)
ammonium sulfate (7783-20-2)	
LC50 fish 1	126 mg/l (96 h; <i>Poecilia reticulata</i>)
EC50 Daphnia 1	202 mg/l (96 h; <i>Daphnia magna</i>)
LC50 fish 2	250 - 480 mg/l (96 h; <i>Brachydanio rerio</i>)
EC50 Daphnia 2	433 mg/l (50 h; <i>Daphnia magna</i>)
TLM fish 1	1290 ppm (96 h; <i>Gambusia affinis</i>)
Monoammonium Phosphate (7722-76-1)	
LC50 fish 1	155 ppm (96 h; <i>Pimephales promelas</i>)
potassium chloride (7447-40-7)	
LC50 fish 1	920 mg/l (96 h; <i>Gambusia affinis</i> ; Static system)
EC50 Daphnia 1	630 mg/l (48 h; <i>Ceriodaphnia dubia</i>)
LC50 fish 2	2010 mg/l (96 h; <i>Lepomis macrochirus</i> ; Static system)
EC50 Daphnia 2	660 mg/l (48 h; <i>Daphnia magna</i>)
Threshold limit algae 1	850 mg/l (72 h; <i>Scenedesmus subspicatus</i>)
Threshold limit algae 2	> 100 mg/l (72 h; <i>Scenedesmus subspicatus</i> ; GLP)
potassium sulfate (7778-80-5)	
LC50 fish 1	1692.4 mg/l (96 h; <i>Alburnus alburnus</i>)
LC50 other aquatic organisms 1	> 1000 mg/l (96 h)
EC50 Daphnia 1	890 mg/l (48 h; <i>Daphnia magna</i> ; Static system)
LC50 fish 2	653 - 796 mg/l (96 h; <i>Lepomis macrochirus</i>)
EC50 Daphnia 2	1180 mg/l (96 h; Crustacea)
TLM fish 1	3550 ppm (96 h; <i>Lepomis sp.</i>)
Threshold limit other aquatic organisms 1	> 1000 mg/l (96 h)
Threshold limit algae 1	2900 mg/l (72 h; <i>Scenedesmus subspicatus</i>)

12.2. Persistence and degradability

Best 14-14-14 Landscape Color	
Persistence and degradability	Not established.
urea (57-13-6)	
Persistence and degradability	Inherently biodegradable. Hydrolysis in water. Not established.
ThOD	0.27 g O ₂ /g substance

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ammonium sulfate (7783-20-2)	
Persistence and degradability	Biodegradability in water: no data available. Not established.
Monoammonium Phosphate (7722-76-1)	
Persistence and degradability	Biodegradability in water: no data available. Not established.
potassium chloride (7447-40-7)	
Persistence and degradability	Biodegradability: not applicable. Not established.
Biochemical oxygen demand (BOD)	Not applicable
Chemical oxygen demand (COD)	Not applicable
ThOD	Not applicable
BOD (% of ThOD)	Not applicable
potassium sulfate (7778-80-5)	
Persistence and degradability	Biodegradability: not applicable. Not established.
Biochemical oxygen demand (BOD)	Not applicable
Chemical oxygen demand (COD)	Not applicable
ThOD	Not applicable
BOD (% of ThOD)	Not applicable
Iron Oxysulfate	
Persistence and degradability	Not established.
Pacmix (None)	
Persistence and degradability	Not established.
Sand	
Persistence and degradability	Not established.
Wax (64771-72-8)	
Persistence and degradability	Not established.
12.3. Bioaccumulative potential	
Best 14-14-14 Landscape Color	
Bioaccumulative potential	Not established.
urea (57-13-6)	
BCF fish 1	1 (72 h; Brachydanio rerio; Fresh water)
BCF other aquatic organisms 1	11700 (Chlorella sp.)
Log Pow	< -1.73 (Experimental value; EU Method A.8: Partition Coefficient)
Bioaccumulative potential	Bioaccumulation: not applicable. Not established.
ammonium sulfate (7783-20-2)	
Log Pow	-5.1
Bioaccumulative potential	Bioaccumulation: not applicable. Not established.
Monoammonium Phosphate (7722-76-1)	
Bioaccumulative potential	Not bioaccumulative. Not established.
potassium chloride (7447-40-7)	
Log Pow	-0.46 (Estimated value)
Bioaccumulative potential	Bioaccumulation: not applicable. Not established.
potassium sulfate (7778-80-5)	
Bioaccumulative potential	Not bioaccumulative. Not established.
Iron Oxysulfate	
Bioaccumulative potential	Not established.
Pacmix (None)	
Bioaccumulative potential	Not established.
Sand	
Bioaccumulative potential	Not established.

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Wax (64771-72-8)	
Bioaccumulative potential	Not established.

12.4. Mobility in soil

No additional information available

12.5. Other adverse effects

Effect on the global warming : No known ecological damage caused by this product.

Other information : Avoid release to the environment.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Waste disposal recommendations : Dispose in a safe manner in accordance with local/national regulations.

Ecology - waste materials : Avoid release to the environment.

SECTION 14: Transport information

Department of Transportation (DOT)

In accordance with DOT

Not regulated for transport

Additional information

Other information : No supplementary information available.

ADR

No additional information available

Transport by sea

No additional information available

Air transport

No additional information available

SECTION 15: Regulatory information

15.1. US Federal regulations

All components of this product are listed, or excluded from listing, on the United States Environmental Protection Agency Toxic Substances Control Act (TSCA) inventory except for:

Iron Oxysulfate	CAS No	
Pacmix	CAS No None	
Sand	CAS No	
Polymer Coating	CAS No	

This product or mixture does not contain a toxic chemical or chemicals in excess of the applicable de minimis concentration as specified in 40 CFR §372.38(a) subject to the reporting requirements of section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372.

15.2. International regulations

CANADA

No additional information available

EU-Regulations

No additional information available

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Classification according to Regulation (EC) No. 1272/2008 [CLP]

No additional information available

Classification according to Directive 67/548/EEC [DSD] or 1999/45/EC [DPD]

Not classified

National regulations

No additional information available

15.3. US State regulations

No additional information available

SECTION 16: Other information

Data sources : REGULATION (EC) No 1272/2008 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 16 December 2008 on classification, labeling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006.

Other information : None.

Full text of H-phrases:

Eye Irrit. 2B	Serious eye damage/eye irritation Category 2B
Skin Irrit. 2	Skin corrosion/irritation Category 2
STOT SE 3	Specific target organ toxicity (single exposure) Category 3
H315	Causes skin irritation
H320	Causes eye irritation
H335	May cause respiratory irritation

SDS US (GHS HazCom 2012)

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Best Triple Pro 15-15-15

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Product form : Mixture
Product name : Best Triple Pro 15-15-15
Product code : M74102

1.2. Relevant identified uses of the substance or mixture and uses advised against

1.3. Details of the supplier of the safety data sheet

JR Simplot Company
Boise, ID 83707
T 1-208-336-2110

1.4. Emergency telephone number

Emergency number : CHEMTREC 1-800-424-9300

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

GHS-US classification

Eye Irrit. 2B H320
STOT SE 3 H335

Full text of H-phrases: see section 16

2.2. Label elements

GHS-US labelling

Hazard pictograms (GHS-US) :



GHS07

Signal word (GHS-US) :

Warning

Hazard statements (GHS-US) :

H320 - Causes eye irritation
H335 - May cause respiratory irritation

Precautionary statements (GHS-US) :

P261 - Avoid breathing dust/fume/gas/mist/vapours/spray
P264 - Wash ... thoroughly after handling
P271 - Use only outdoors or in a well-ventilated area
P304+P340 - If inhaled: Remove person to fresh air and keep comfortable for breathing
P305+P351+P338 - If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P312 - Call a poison center/doctor/... if you feel unwell
P337+P313 - If eye irritation persists: Get medical advice/attention
P403+P233 - Store in a well-ventilated place. Keep container tightly closed
P405 - Store locked up
P501 - Dispose of contents/container to ... in accordance with local, regional, and national regulations

2.3. Other hazards

No additional information available

2.4. Unknown acute toxicity (GHS-US)

No data available

SECTION 3: Composition/information on ingredients

3.1. Substance

Not applicable

3.2. Mixture

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Name	Product identifier	%	GHS-US classification
ammonium sulfate	(CAS No) 7783-20-2		Eye Irrit. 2B, H320 STOT SE 3, H335
potassium chloride	(CAS No) 7447-40-7		Not classified
Monoammonium Phosphate	(CAS No) 7722-76-1		Eye Irrit. 2B, H320 STOT SE 3, H335
urea	(CAS No) 57-13-6		Skin Irrit. 2, H315 Eye Irrit. 2B, H320 STOT SE 3, H335
wax (paraffins- petroleum)	(CAS No) 64771-72-8		Not classified
Sand			STOT SE 3, H335

*ingredients without WT% are considered proprietary based on trade secrets

SECTION 4: First aid measures

4.1. Description of first aid measures

- First-aid measures general : Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label where possible).
- First-aid measures after inhalation : Remove to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER/doctor/physician if you feel unwell. Assure fresh air breathing. Allow the victim to rest.
- First-aid measures after skin contact : Remove affected clothing and wash all exposed skin area with mild soap and water, followed by warm water rinse.
- First-aid measures after eye contact : IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Rinse immediately with plenty of water. Obtain medical attention if pain, blinking or redness persist.
- First-aid measures after ingestion : Rinse mouth. Do NOT induce vomiting. Obtain emergency medical attention.

4.2. Most important symptoms and effects, both acute and delayed

- Symptoms/injuries : Not expected to present a significant hazard under anticipated conditions of normal use.
- Symptoms/injuries after inhalation : May cause respiratory irritation.
- Symptoms/injuries after eye contact : Causes eye irritation.

4.3. Indication of any immediate medical attention and special treatment needed

No additional information available

SECTION 5: Firefighting measures

5.1. Extinguishing media

- Suitable extinguishing media : Foam. Dry powder. Carbon dioxide. Water spray. Sand.
- Unsuitable extinguishing media : Do not use a heavy water stream.

5.2. Special hazards arising from the substance or mixture

No additional information available

5.3. Advice for firefighters

- Firefighting instructions : Use water spray or fog for cooling exposed containers. Exercise caution when fighting any chemical fire. Prevent fire-fighting water from entering environment.
- Protection during firefighting : Do not enter fire area without proper protective equipment, including respiratory protection.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

- Emergency procedures : Evacuate unnecessary personnel.

6.1.2. For emergency responders

- Protective equipment : Equip cleanup crew with proper protection.
- Emergency procedures : Ventilate area.

6.2. Environmental precautions

Prevent entry to sewers and public waters. Notify authorities if liquid enters sewers or public waters.

6.3. Methods and material for containment and cleaning up

- Methods for cleaning up : On land, sweep or shovel into suitable containers. Minimize generation of dust. Store away from other materials.

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6.4. Reference to other sections

See Heading 8. Exposure controls and personal protection.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling : Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Provide good ventilation in process area to prevent formation of vapour. Avoid breathing dust/fume/gas/mist/vapours/spray. Use only outdoors or in a well-ventilated area.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions : Keep only in the original container in a cool, well ventilated place away from : Keep container tightly closed. Keep container closed when not in use.

Incompatible products : Strong bases. Strong acids.

Incompatible materials : Sources of ignition. Direct sunlight.

7.3. Specific end use(s)

No additional information available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

No additional information available

8.2. Exposure controls

Personal protective equipment : Avoid all unnecessary exposure.

Hand protection : Wear protective gloves.

Eye protection : Chemical goggles or safety glasses.

Respiratory protection : Wear appropriate mask.

Other information : Do not eat, drink or smoke during use.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state : Solid

Appearance : Granules.

Colour : Light green

Odour : characteristic

Odour threshold : No data available

pH : 6 - 7

Relative evaporation rate (butylacetate=1) : No data available

Melting point : No data available

Freezing point : No data available

Boiling point : No data available

Flash point : No data available

Auto-ignition temperature : No data available

Decomposition temperature : No data available

Flammability (solid, gas) : No data available

Vapour pressure : No data available

Relative vapour density at 20 °C : No data available

Relative density : No data available

Solubility : Soluble.
Water: Solubility in water of component(s) of the mixture :
• ammonium sulfate: 77 g/100ml • Monoammonium Phosphate: 38 g/100ml • urea: 100 g/100ml • wax (paraffins- petroleum): insoluble • potassium chloride: 34 g/100ml

Log Pow : No data available

Log Kow : No data available

Viscosity, kinematic : No data available

Viscosity, dynamic : No data available

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Explosive properties : No data available
Oxidising properties : No data available
Explosive limits : No data available

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

No additional information available

10.2. Chemical stability

Not established.

10.3. Possibility of hazardous reactions

Not established.

10.4. Conditions to avoid

Direct sunlight. Extremely high or low temperatures.

10.5. Incompatible materials

Strong acids. Strong bases.

10.6. Hazardous decomposition products

fume. Carbon monoxide. Carbon dioxide.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity : Not classified

ammonium sulfate (7783-20-2)	
LD50 oral rat	2840 mg/kg (Rat)
LD50 dermal rat	> 2000 mg/kg
ATE US (oral)	2840.00000000 mg/kg bodyweight

Monoammonium Phosphate (7722-76-1)	
LD50 oral rat	5750 mg/kg (Rat)
LD50 dermal rat	> mg/kg
LD50 dermal rabbit	> 7940 mg/kg (Rabbit)
ATE US (oral)	5750.00000000 mg/kg bodyweight

potassium chloride (7447-40-7)	
LD50 oral rat	2600 mg/kg (Rat)
ATE US (oral)	2600.00000000 mg/kg bodyweight

urea (57-13-6)	
LD50 oral rat	8471 mg/kg (Rat)
LD50 dermal rat	> 3200 mg/kg (Rat)
LD50 dermal rabbit	> 21000 mg/kg (Rabbit)
ATE US (oral)	8471.00000000 mg/kg bodyweight

wax (paraffins- petroleum) (64771-72-8)	
LD50 oral rat	> 5000 mg/kg (Rat)
LD50 dermal rabbit	> 2000 mg/kg (Rabbit)

Skin corrosion/irritation : Not classified
pH: 6 - 7

Serious eye damage/irritation : Causes eye irritation.
pH: 6 - 7

Respiratory or skin sensitisation : Not classified

Germ cell mutagenicity : Not classified

Based on available data, the classification criteria are not met

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Carcinogenicity	: Not classified
Reproductive toxicity	: Not classified Based on available data, the classification criteria are not met
Specific target organ toxicity (single exposure)	: May cause respiratory irritation.
Specific target organ toxicity (repeated exposure)	: Not classified Based on available data, the classification criteria are not met
Aspiration hazard	: Not classified Based on available data, the classification criteria are not met
Potential adverse human health effects and symptoms	: Based on available data, the classification criteria are not met.
Symptoms/injuries after inhalation	: May cause respiratory irritation.
Symptoms/injuries after eye contact	: Causes eye irritation.

SECTION 12: Ecological information

12.1. Toxicity

ammonium sulfate (7783-20-2)	
LC50 fishes 1	126 mg/l (96 h; <i>Poecilia reticulata</i>)
EC50 Daphnia 1	202 mg/l (96 h; <i>Daphnia magna</i>)
LC50 fish 2	250 - 480 mg/l (96 h; <i>Brachydanio rerio</i>)
EC50 Daphnia 2	433 mg/l (50 h; <i>Daphnia magna</i>)
TLM fish 1	1290 ppm (96 h; <i>Gambusia affinis</i>)

Monoammonium Phosphate (7722-76-1)	
LC50 fishes 1	155 ppm (96 h; <i>Pimephales promelas</i>)

potassium chloride (7447-40-7)	
LC50 fishes 1	920 mg/l (96 h; <i>Gambusia affinis</i> ; Static system)
EC50 Daphnia 1	630 mg/l (48 h; <i>Ceriodaphnia dubia</i>)
LC50 fish 2	2010 mg/l (96 h; <i>Lepomis macrochirus</i> ; Static system)
EC50 Daphnia 2	660 mg/l (48 h; <i>Daphnia magna</i>)
Threshold limit algae 1	850 mg/l (72 h; <i>Scenedesmus subspicatus</i>)
Threshold limit algae 2	> 100 mg/l (72 h; <i>Scenedesmus subspicatus</i> ; GLP)

urea (57-13-6)	
LC50 fishes 1	> 6810 mg/l (96 h; <i>Leuciscus idus</i>)
EC50 Daphnia 1	> 10000 mg/l (48 h; <i>Daphnia magna</i>)
LC50 fish 2	17500 mg/l (96 h; <i>Poecilia reticulata</i>)
EC50 Daphnia 2	> 10000 mg/l (24 h; <i>Daphnia magna</i>)
TLM fish 1	17500 ppm (96 h; <i>Poecilia reticulata</i>)
Threshold limit other aquatic organisms 1	120000 mg/l (16 h; Bacteria; Toxicity test)
Threshold limit other aquatic organisms 2	> 10000 mg/l (<i>Pseudomonas putida</i>)
Threshold limit algae 2	> 10000 mg/l (168 h; <i>Scenedesmus quadricauda</i>)

12.2. Persistence and degradability

Best Triple Pro 15-15-15	
Persistence and degradability	Not established.

ammonium sulfate (7783-20-2)	
Persistence and degradability	Biodegradability in water: no data available. Not established.

Monoammonium Phosphate (7722-76-1)	
Persistence and degradability	Biodegradability in water: no data available. Not established.

potassium chloride (7447-40-7)	
Persistence and degradability	Biodegradability: not applicable. Not established.
Biochemical oxygen demand (BOD)	Not applicable
Chemical oxygen demand (COD)	Not applicable

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potassium chloride (7447-40-7)	
ThOD	Not applicable
BOD (% of ThOD)	Not applicable

urea (57-13-6)	
Persistence and degradability	Inherently biodegradable. Hydrolysis in water. Not established.
ThOD	0.27 g O ₂ /g substance

wax (paraffins- petroleum) (64771-72-8)	
Persistence and degradability	Readily biodegradable in water.

Sand	
Persistence and degradability	Not established.

12.3. Bioaccumulative potential

Best Triple Pro 15-15-15	
Bioaccumulative potential	Not established.

ammonium sulfate (7783-20-2)	
Log Pow	-5.1
Bioaccumulative potential	Bioaccumulation: not applicable. Not established.

Monoammonium Phosphate (7722-76-1)	
Bioaccumulative potential	Not bioaccumulative. Not established.

potassium chloride (7447-40-7)	
Log Pow	-0.46 (Estimated value)
Bioaccumulative potential	Bioaccumulation: not applicable. Not established.

urea (57-13-6)	
BCF fish 1	1 (72 h; Brachydanio rerio; Fresh water)
BCF other aquatic organisms 1	11700 (Chlorella sp.)
Log Pow	-2.59 - -1.59
Bioaccumulative potential	Bioaccumulation: not applicable. Not established.

wax (paraffins- petroleum) (64771-72-8)	
Bioaccumulative potential	No bioaccumulation data available.

Sand	
Bioaccumulative potential	Not established.

12.4. Mobility in soil

No additional information available

12.5. Other adverse effects

- Effect on ozone layer : No additional information available
- Effect on the global warming : No known ecological damage caused by this product.
- Other information : Avoid release to the environment.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

- Waste disposal recommendations : Dispose in a safe manner in accordance with local/national regulations.
- Ecology - waste materials : Avoid release to the environment.

SECTION 14: Transport information

In accordance with DOT
Not regulated for transport

Additional information

- Other information : No supplementary information available.

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ADR

Transport document description :

Transport by sea

No additional information available

Air transport

No additional information available

SECTION 15: Regulatory information

15.1. US Federal regulations

No additional information available

15.2. International regulations

CANADA

No additional information available

EU-Regulations

No additional information available

Classification according to Regulation (EC) No. 1272/2008 [CLP]

Classification according to Directive 67/548/EEC or 1999/45/EC

Not classified

15.2.2. National regulations

No additional information available

15.3. US State regulations

SECTION 16: Other information

Data sources :

REGULATION (EC) No 1272/2008 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 16 December 2008 on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006.

Other information :

None.

Full text of H-phrases: see section 16:

Eye Irrit. 2B	Serious eye damage/eye irritation, Category 2B
Skin Irrit. 2	Skin corrosion/irritation, Category 2
STOT SE 3	Specific target organ toxicity — Single exposure, Category 3, Respiratory tract irritation
H315	Causes skin irritation
H320	Causes eye irritation
H335	May cause respiratory irritation

SDS US (GHS HazCom 2012) - Custom

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SAFETY DATA SHEET

Sierraform® 18-09-18+Fe+Mn (8/10 weeks).

Conforms to 93/112/EC and ISO 11014-1

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

Product name : Sierraform® 18-09-18+Fe+Mn (8/10 weeks).
Item number : 41210102*.
Manufacturer/Supplier : Scotts International B.V.
Nijverheidsweg 1-5
6422 PD Heerlen
The Netherlands.
Emergency telephone number : As long as no emergency telephone number is available in Europe, please contact in case of an emergency: ++31 455609100. UK: 01865 407333

2. COMPOSITION/INFORMATION ON INGREDIENTS

Substance/preparation : Preparation.

Information on hazardous ingredients

This product does not have to be classified according to the EU regulations (67/548/EEC-88/379/EEC).

Chemical name	CAS No.	%	EC Number	Symbol	R-Phrases
Manganese sulphate, MnSO ₄	7785-87-7	0.30	232-089-9	Xn, N	48/20/22, 51/53
Ironsulphate, FeSO ₄	7720-78-7	1.20	-	Xn	22

Occupational Exposure Limit(s), if available, are listed in section 8

3. HAZARDS IDENTIFICATION

Most important hazards : No physical/chemical, environmental or human health hazards have been reported or known.

4. FIRST-AID MEASURES

Effects and symptoms : No effects or symptoms occur.

First-aid measures

Inhalation : Dusty conditions are unlikely if product is used as intended and product-coating remains intact. However, if prolonged inhalation of dust occurs, remove victim to fresh air. Consult a doctor in the event of any complaints.

Ingestion : Wash out mouth with water. Do not induce vomiting. Never give anything by mouth to an unconscious person. Make victim drink plenty of water. Consult a doctor in the event of any complaints.

Skin contact : Wash off with water and soap. Consult a doctor in the event of any complaints.

Eye contact : Wash out with water. Consult a doctor in the event of any complaints.

5. FIRE-FIGHTING MEASURES

Extinguishing media

Suitable : Water, water spray.
Special fire-fighting procedures : In case of fire and/or explosion do not breathe fumes. Evacuate all personnel to a safe area. Cool exposed containers with water spray.

SAFETY DATA SHEET

Sierraform® 18-09-18+Fe+Mn (8/10 weeks).

Unusual fire/explosion hazards : Product smoulders! In case of fire, cool with water or waterspray.
Hazardous thermal (de)composition products : Nitrogen oxides, ammonia and carbon dioxide.
Protection of fire-fighters : Use appropriate protection. In case of insufficient ventilation, wear suitable respiratory equipment.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions : Gloves are recommended. Respiratory protection is not required if good ventilation is maintained.
Environmental precautions : Not applicable.
Methods for cleaning up : Collect spilled material. Wash away remainder with plenty of water.

7. HANDLING AND STORAGE

Handling : Gloves are recommended. Prevent formation of clouds of dust.
Storage : Keep away from food, drink and animal feedingstuffs. Keep away from combustible material. Keep out of the reach of children.
Packaging materials
Suitable : Paperbags or Bulk.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Hygiene measures : When using do not eat, drink or smoke. Follow good housekeeping practices. Wash hands thoroughly after handling.
Occupational Exposure Limits
Chemical name : **OEL (United Kingdom)**
Ironsulphate, FeSO₄ : 1 mg/m³
Manganese sulphate, MnSO₄ : 5 mg/m³.
Personal protective equipment : No specific personal protection equipment is required.
Other information : TWA (Total dust): 10 mg/m³.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state : Granulated fertilizer.
Colour : Brownish and grey.
Odour : Odourless.
Bulk density : 700-800 kg/m³.
Solubility in water : Partly soluble.

10. STABILITY AND REACTIVITY

Stability : Stable under normal conditions.
Conditions to avoid : Keep away from heat. Keep away from combustible material.
Hazardous reactions : Not applicable.
Hazardous decomposition products : Nitrogen oxides, ammonia and carbon dioxide.

SAFETY DATA SHEET

Sierraform® 18-09-18+Fe+Mn (8/10 weeks).

11. TOXICOLOGICAL INFORMATION

No toxicological information is available.

12. ECOLOGICAL INFORMATION

No ecological information is available.

13. DISPOSAL CONSIDERATIONS

Methods of disposal : Use up product completely. Packaging material is industrial waste.
Disposal according to the local legislation.

14. TRANSPORT INFORMATION

International transport regulations

Land - Road/Railway : This product is not classified according to ADR/RID.

Inland waterways : This product is not classified according to ADNR.

Sea : This product is not classified according to IMDG.

Air : This product is not classified according to IATA.

National transport regulations

United Kingdom : No additional national transport regulations are known to the supplier

15. REGULATORY INFORMATION

Classification : This product does not have to be classified according to the EU regulations (67/548/EEC-88/379/EEC)

National regulations

United Kingdom : No additional national regulations are known to the supplier

16. OTHER INFORMATION

This information contained herein is, to the best of Scott's knowledge and belief, accurate and reliable as of the date of preparation of this document. However, no warranty or guarantee, express or implied, is made as to the accuracy or reliability, and Scotts shall not be liable for any loss or damage arising out of the use thereof. No authorization is given or implied to use any patented invention without a license. In addition, Scotts shall not be liable for any damage or injury resulting from abnormal use, from any failure to adhere to recommended practices or from any hazards inherent in the nature of the product.

HISTORY

Date of printing : 28-10-2003

Date previous issue : 17-04-2003

Date of issue : 01-05-2003

Version : 008.00.00

The version-number is made up of three parts; part 1 is a general information code, part 2 a country-specific code and part 3 a language-specific code (Country: Great Britain; Language: English)

SAFETY DATA SHEET
Sierraform® 18-09-18+Fe+Mn (8/10 weeks).

Prepared by : Technology Department.

Symbol of Quality

GROW MORE



World Headquarters

SAFETY DATA SHEET

S.D.S.

I – PRODUCT IDENTIFICATION

TRADE NAME (as labeled) **GROW MORE 20-20-20**

MANUFACTURER'S NAME : GROW MORE, INC.
 15600 New Century Drive
 Gardena, CA 90248
 Tel. (310) 515-1700
 Fax (310) 515-4937

DATE PREPARED/REVISED April 2, 2014

NAME OF PREPARER H. Langheim

II – COMPOSITION/INFORMATION ON INGREDIENTS

CHEMICAL INGREDIENTS	CAS. No
Manganese EDTA	7439965
Copper EDTA	7440508
Sodium Molybdate	7439987
Zinc EDTA	7440666

III – HAZARD IDENTIFICATION

EMERGENCY OVERVIEW

APPEARANCE – Fine crystals & powder

ODOR - None

POTENTIAL HEALTH EFFECTS

EYES - May cause redness and slight irritation.

SKIN - Repeated contact may cause slight irritation.

SWALLOWED - Possible abdominal pain, diarrhea, diuresis, and nausea.

OSHA/GHS STATUS – Not considered hazardous by the OSHA Hazard Communication Standard

SIGNAL WORD – No signal word

HAZARD STATEMENTS – No known significant effects or critical hazards.

IV – FIRST AID MEASURES

Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled. No specific treatment.

EYE CONTACT - Wash thoroughly with water for at least 15 minutes. Remove contact lenses. Hold eyelids apart during flushing. Send patient immediately to physician.

SKIN CONTACT - Wipe excess material with dry cloth, while removing contaminated clothing and shoes with large amounts of water and soap.

INHALED - Remove from exposure to fresh air. Get medical attention if symptoms occur.

SWALLOWED - Rinse mouth. Drink 2-3 glasses of water and seek medical assistance. Do not induce vomiting or give anything by mouth to an unconscious person. Get medical attention if symptoms occur.

ACUTE ORAL TOXICITY – none known

ACUTE INHALATION TOXICITY – none known

ACUTE DERMAL IRRITATION – none known

V – FIRE-FIGHTING MEASURES

SPECIAL FIREFIGHTING PROCEDURE - Must wear MSHA/NIOSH approved self-contained breathing Apparatus.

UNUSUAL FIRE & EXPLOSION HAZARD - Products of combustion are toxic. Explosive mixtures form air.

VI - ACCIDENTAL RELEASE MEASURES

SPILL RESPONSE PROCEDURE (Include employee protection measures): Apply as fertilizer to field, dilute with sufficient water. Drain into the sewer with abundant amount of water.

VII - HANDLING AND STORAGE

To maintain product quality, do not store in heat or direct sunlight. Use good housekeeping hygienic practices such as washing hands with soap after handling. Keep out of reach of children and pets. Do not reuse empty containers.

VIII - EXPOSURE CONTROLS/PERSONAL PROTECTION

VENTILATION – Local exhaust.

ENGINEERING CONTROLS – N/A

RESPIRATORY PROTECTION – Where dust is generated by the process, MSHA/NIOSH approved respirator is advised in the absence of proper environmental control.

EYE PROTECTION – Safety glasses or goggles where there is a potential eye contact.

SKIN PROTECTION – Wear protective work gown, rubber or plastic gloves to prevent irritation.

IX - PHYSICAL AND CHEMICAL PROPERTIES

GENERAL INFORMATION

APPEARANCE – Fine crystals & powder

ODOR – None

BOILING POINT OR RANGE °F – N/A

MELTING POINT OR RANGE °F – N/A

FLAMMABILITY – non-flammable

EXPLOSIVE PROPERTIES – non-explosive

pH of 1% SOLUTION – 4.5 – 5.5

SPECIFIC GRAVITY – N/A

EVAPORATION RATE (BUTYLACETATE=1): 0

DECOMPOSITION TEMPERATURE – 250°F – 374°F

MOLECULAR WEIGHT – 110 – 117

SOLUBILITY IN WATER – highly soluble (> 80%)

X - STABILITY AND REACTIVITY

STABILITY - Stable under normal conditions of use

CONDITIONS TO AVOID – Heating with Sodium Phosphite. Dissolving with Sodium Hyposulfite. Fire

INCOMPATIBILITY – Corrosive to Aluminum, Steel, Brass and Copper.

HAZARDOUS DECOMPOSITION PRODUCTS: Decomposition may produce toxic fumes of Nitrogen oxides

HAZARDOUS POLYMERIZATION – will not occur

XI – TOXICOLOGICAL INFORMATION

SKIN IRRITATION – none

EYE IRRITATION – none

SENSITIZATION – none

CHRONIC TOXICITY – none known

XII – ECOLOGICAL INFORMATION

ECOTOXICITY EFFECTS

ACUTE TOXICITY – none known

MOBILITY – N/A

PERSISTENCE AND DEGRADABILITY – none known

XIII – DISPOSAL CONSIDERATIONS

Dispose of within current local and state regulations. No special method required.

XIV – TRANSPORT INFORMATION

U.S. DEPARTMENT OF TRANSPORTATION - Not regulated by DOT.

XV - REGULATORY INFORMATION

TSCA STATUS – Not determined

OSHA STATUS – Not listed as hazardous

CERCLA REPORTABLE QUANTITY (40 CFR117, 302)

SARA TITLE 1

SECTION 302 (40 CFR 355)

SECTION 311/312 (40 CFR 370)

1 Immediate (Acute) Health Effect – NO

2 Delayed (Chronic) Health Effect – NO

3 Fire Hazard – NO

4 Sudden Release of Pressure Hazard – NO

5 Reactivity Hazard – NO

SECTION 313 (40 CFR 372) – Please refer to any other federal, state and local regulations.

XVI - OTHER INFORMATION

Although the information and recommendations set forth in this sheet are believed to be correct as of the date hereof, Grow More, Inc. makes no representation as to the completeness or accuracy of such information and recommendations. Grow More, Inc. shall in no event be responsible for any damages of whatsoever nature or indirectly resulting from the publication or use of or reliance upon such information and recommendations. You are encouraged to advise anyone working with or exposed to such products of the information contained herein.

No warranty either expressed or implied of merchantability or fitness or of any other nature with respect to the product or to the information a recommendations herein made hereunder.



Material Safety Data Sheet

BAYER ADVANCED 2-IN-1 SYSTEMIC ROSE & FLOWER CARE READY-TO-USE GRANULES

MSDS Number: 102000013755
 MSDS Version 1.1
 Revision Date: 02/04/2009

SECTION 1. CHEMICAL PRODUCT AND COMPANY INFORMATION

Product Name BAYER ADVANCED 2-IN-1 SYSTEMIC ROSE & FLOWER CARE READY-TO-USE GRANULES
MSDS Number 102000013755
EPA Registration No. 72155-49

Bayer Environmental Science
 2 T.W. Alexander Drive
 Research Triangle PK, NC 27709
 USA

For MEDICAL, TRANSPORTATION or other EMERGENCY call: 1-800-334-7577 (24 hours/day)
 For Product Information call: 1-800-331-2867

SECTION 2. COMPOSITION/INFORMATION ON INGREDIENTS

<u>Hazardous Component Name</u>	<u>CAS-No.</u>	<u>Average % by Weight</u>
Disulfoton	298-04-4	1.00

SECTION 3. HAZARDS IDENTIFICATION

NOTE: Please refer to Section 11 for detailed toxicological information.

Emergency Overview Warning! May be fatal if swallowed. Moderate eye irritation. Avoid contact with skin, eyes and clothing. Cholinesterase inhibitor.

Physical State granular

Appearance multicolored

Routes of Exposure Eye contact, Skin contact, Inhalation, Ingestion

Immediate Effects

Eye Moderate eye irritation may occur. Avoid contact with eyes.

Skin May cause slight irritation. Avoid contact with skin and clothing.

Ingestion May be fatal if swallowed. Do not take internally.

Inhalation Avoid breathing dust.



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Potential Environmental Effect Extremely toxic to birds. Extremely toxic to mammals. Extremely toxic to fish and aquatic invertebrates.

SECTION 4. FIRST AID MEASURES

General	When possible, have the product container or label with you when calling a poison control center or doctor or going for treatment.
Eye	Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Call a physician or poison control center immediately.
Skin	Take off contaminated clothing and shoes immediately. Wash off immediately with plenty of water for at least 15 minutes. Call a physician or poison control center immediately.
Ingestion	Call a physician or poison control center immediately. Rinse out mouth and give water in small sips to drink. DO NOT induce vomiting unless directed to do so by a physician or poison control center. Never give anything by mouth to an unconscious person. Do not leave victim unattended.
Inhalation	Move to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth if possible. Call a physician or poison control center immediately.
Notes to Physician Signs and Symptoms	The symptoms of cholinesterase inhibition include: Discomfort in the chest sweating constriction of pupils stomach pain Vomiting Diarrhoea
Hazards	Cholinesterase inhibitor.
Treatment	The product inhibits cholinesterase resulting in stimulation of the central nervous system, the parasympathetic nervous system, and the somatic motor nerves. Appropriate supportive and symptomatic treatment as indicated by the patient's condition is recommended.

SECTION 5. FIRE FIGHTING MEASURES

Suitable Extinguishing Media Water, Carbon dioxide (CO2), Dry chemical, Foam



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Fire Fighting Instructions Avoid contact with spilled product or contaminated surfaces. Evacuate personnel to safe areas. Keep out of smoke. Fight fire from upwind position. Do not allow run-off from fire fighting to enter drains or water courses.

Firefighters should wear NIOSH approved self-contained breathing apparatus and full protective clothing.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal Precautions Keep unauthorized people away. Isolate hazard area. Avoid contact with spilled product or contaminated surfaces. Use personal protective equipment.

Methods for cleaning up Avoid dust formation. Sweep up or vacuum up spillage and collect in suitable container for disposal. Clean contaminated floors and objects thoroughly, observing environmental regulations. Contaminated soil may have to be removed and disposed. Decontaminate tools and equipment following cleanup.

Additional Advice Do not allow to enter soil, waterways or waste water canal. Do not allow product to contact vegetation.

SECTION 7. HANDLING AND STORAGE

Handling Procedures Avoid contact with skin, eyes and clothing. Handle and open container in a manner as to prevent spillage. Maintain exposure levels below the exposure limit through the use of general and local exhaust ventilation.

Storing Procedures Store in original container and out of the reach of children, preferably in a locked storage area. Store in a cool, dry place and in such a manner as to prevent cross contamination with other pesticides, fertilizers, food, and feed.

Work/Hygienic Procedures Handle in accordance with good industrial hygiene and safety practice. Wash hands thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco, using the toilet or applying cosmetics.

Remove soiled clothing immediately and clean thoroughly before using again. Wash thoroughly and put on clean clothing.

SECTION 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

General Protection Follow all label instructions. Train employees in safe use of the product.

Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables, use detergent and warm/tepid water. Keep and wash



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	PPE separately from other laundry.
Eye/Face Protection	Chemical resistant goggles must be worn.
Hand protection	Chemical resistant nitrile rubber gloves
Body Protection	Wear long-sleeved shirt and long pants and shoes plus socks.
Respiratory Protection	When respirators are required, select NIOSH approved equipment based on actual or potential airborne concentrations and in accordance with the appropriate regulatory standards and/or industry recommendations.

Exposure Limits

Disulfoton	298-04-4	ACGIH	TWA	0.05 mg/m3
		NIOSH	REL	0.1 mg/m3
		OSHA Z1A	TWA	0.1 mg/m3
		US CA OEL	TWA PEL	0.1 mg/m3
		TX ESL	ST ESL	1 ug/m3
		TX ESL	AN ESL	0.1 ug/m3

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	multicolored
Physical State	granular

SECTION 10. STABILITY AND REACTIVITY

Conditions to Avoid	Sustained temperatures above 37.8 °C (100 °F).
Incompatibility	Strong oxidizing agents Bases Strong acids
Hazardous Decomposition Products	Carbon dioxide (CO2) dimethyl disulfide
Hazardous Reactions	No hazardous reactions when stored and handled according to prescribed instructions. Stable under recommended storage conditions.

SECTION 11. TOXICOLOGICAL INFORMATION

Acute toxicity data have been bridged from a similar systemic rose and flower care formulation containing a similar amount of the active ingredient, disulfoton. The non-acute information pertains to the technical-grade



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active ingredient.

Acute Oral Toxicity male rat: LD50: 1,411 mg/kg
female rat: LD50: 347 mg/kg

Acute Dermal Toxicity rabbit: LD50: > 2,000 mg/kg

Acute Inhalation Toxicity male rat: LC50: 3.6 mg/l
Exposure time: 4 h
Determined in the form of dust.

female rat: LC50: 1.2 mg/l
Exposure time: 4 h
Determined in the form of dust.

male rat: LC50: 14.4 mg/l
Exposure time: 1 h
Determined in the form of dust.
Extrapolated from the 4 hr LC50.

female rat: LC50: 4.8 mg/l
Exposure time: 1 h
Determined in the form of dust.
Extrapolated from the 4 hr LC50.

Skin Irritation rabbit: Slight irritation.

Eye Irritation rabbit: Moderate eye irritation.

Sensitization guinea pig: Non-sensitizing.

Chronic Toxicity Disulfoton caused cholinesterase inhibition, eye effects and/or increased mortality in chronic studies in rats and dogs.

Assessment Carcinogenicity

Disulfoton was not carcinogenic in lifetime feeding studies in rats and mice.

ACGIH

Disulfoton 298-04-4 Group A4

NTP

None.

IARC

None.

OSHA

None.

Reproductive & Developmental Toxicity

REPRODUCTION: Disulfoton was not a primary reproductive toxicant in a two-generation reproduction study in rats. Reproductive effects were observed only



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at doses that caused systemic toxicity.

DEVELOPMENTAL TOXICITY: Disulfoton was not a primary developmental toxicant in rats and rabbits. Developmental effects were observed at doses that caused maternal toxicity.

Neurotoxicity Disulfoton did not cause delayed neurotoxicity in hens. In acute and subchronic neurotoxicity screening studies in rats, neurobehavioral effects related to cholinergic toxicity were seen without correlating morphological changes in the neural tissues. Disulfoton caused marginal delays in developmental landmarks at maternally toxic doses in the offspring in a developmental neurotoxicity screening study in rats.

Mutagenicity Disulfoton is positive in some mutagenicity studies without activation but negative or weakly positive in most with activation. With no carcinogenicity concerns and no reproductive toxicity concerns at relevant dose levels, the mutagenicity concerns are low.

SECTION 12. ECOLOGICAL INFORMATION

Environmental Precautions

Do not allow to get into surface water, drains and ground water. Do not contaminate surface or ground water by cleaning equipment or disposal of wastes, including equipment wash water.

SECTION 13. DISPOSAL CONSIDERATIONS

General Disposal Guidance

Do not contaminate water, food, or feed by disposal. Dispose in accordance with all local, state/provincial and federal regulations. Never place unused product down any indoor or outdoor drain. Follow advice on product label and/or leaflet.

Container Disposal

Do not re-use empty containers. Place empty container in trash. Then offer for recycling or reconditioning or puncture and dispose of in a sanitary landfill or incineration, or if allowed by State and Local authorities, by burning. Follow advice on product label and/or leaflet.

RCRA Classification

The RCRA Classifications may be on the individual component(s) and not necessarily on the product as a whole.

- 298-04-4 Disulfoton
US. EPA Resource Conservation and Recovery Act (RCRA) Composite List of Hazardous Wastes and Appendix VIII Hazardous Constituents (40 CFR 261): P039
- 298-04-4 Disulfoton
US. EPA Resource Conservation and Recovery Act (RCRA) P List of Hazardous Wastes (40 CFR 261.33(e) and 40 CFR 302 [CERCLA]): P039



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SECTION 14. TRANSPORT INFORMATION

DOT CLASSIFICATION:

Not regulated for all modes of Transport

FREIGHT CLASSIFICATION:

Insecticides or Fungicides, N.O.I.; other than poison

SECTION 15. REGULATORY INFORMATION

EPA Registration No. 72155-49

US Federal Regulations

TSCA list

None.

US. Toxic Substances Control Act (TSCA) Section 12(b) Export Notification (40 CFR 707, Subpt D)

None.

SARA Title III - Section 302 - Notification and Information

Disulfoton 298-04-4

SARA Title III - Section 313 - Toxic Chemical Release Reporting

None.

US States Regulatory Reporting

CA Prop65

This product does not contain any substances known to the State of California to cause cancer.

This product does not contain any substances known to the State of California to cause reproductive harm.

US State Right-To-Know Ingredients

Disulfoton 298-04-4 CA, CT, IL, LA, MA, MN, NJ, PA, RI

Canadian Regulations

Canadian Domestic Substance List

None.

Environmental

CERCLA

Disulfoton 298-04-4 1 lbs

Clean Water Section 307 Priority Pollutants

None.

Safe Drinking Water Act Maximum Contaminant Levels

None.



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SECTION 16. OTHER INFORMATION

NFPA 704 (National Fire Protection Association):

Health - 2 Flammability - 1 Reactivity - 1 Others - none

0 = minimal hazard, 1 = slight hazard, 2 = moderate hazard, 3 = severe hazard, 4 = extreme hazard

Reason to Revise: Updated due to new system and numbering scheme., Updated for general editorial purposes.

Revision Date: 02/04/2009

This information is provided in good faith but without express or implied warranty. The customer assumes all responsibility for safety and use not in accordance with label instructions. The product names are registered trademarks of Bayer.

Best-Tabs 20-10-5 Controlled Release Fertilizer Tablets

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SECTION 1: Identification

1.1. Identification

Product form : Mixture
Product name : Best-Tabs 20-10-5 Controlled Release Fertilizer Tablets
Product code : M74002

1.2. Relevant identified uses of the substance or mixture and uses advised against

No additional information available

1.3. Details of the supplier of the safety data sheet

JR Simplot Company
P.O. Box 70013
Boise, ID 83707
T 1-208-336-2110

1.4. Emergency telephone number

Emergency number : CHEMTREC 1-800-424-9300

SECTION 2: Hazard(s) identification

2.1. Classification of the substance or mixture

GHS-US classification

Skin Irrit. 2 H315 - Causes skin irritation
Eye Irrit. 2B H320 - Causes eye irritation
STOT SE 3 H335 - May cause respiratory irritation

Full text of H-statements: see section 16

2.2. Label elements

GHS-US labelling

Hazard pictograms (GHS-US) :



GHS07

Signal word (GHS-US) : Warning

Hazard statements (GHS-US) : H315 - Causes skin irritation
H320 - Causes eye irritation
H335 - May cause respiratory irritation

Precautionary statements (GHS-US) : P261 - Avoid breathing dust/fume/gas/mist/vapours/spray
P264 - Wash ... thoroughly after handling
P271 - Use only outdoors or in a well-ventilated area
P280 - Wear protective gloves/protective clothing/eye protection/face protection
P302+P352 - If on skin: Wash with plenty of water/...
P304+P340 - If inhaled: Remove person to fresh air and keep comfortable for breathing
P305+P351+P338 - If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P312 - Call a poison center/doctor/... if you feel unwell
P321 - Specific treatment (see ... on this label)
P332+P313 - If skin irritation occurs: Get medical attention
P337+P313 - If eye irritation persists: Get medical attention
P362 - Take off contaminated clothing and wash before reuse
P403+P233 - Store in a well-ventilated place. Keep container tightly closed
P405 - Store locked up
P501 - Dispose of contents/container to ... specify in accordance with local/regional/national regulations

2.3. Other hazards

No additional information available

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2.4. Unknown acute toxicity (GHS US)

Not applicable

SECTION 3: Composition/information on ingredients

3.1. Substance

Not applicable

3.2. Mixture

Name	Product identifier	%	GHS-US classification
formaldehyde/urea,resins	(CAS No) 9011-05-6		Skin Irrit. 2, H315 Eye Irrit. 2B, H320 STOT SE 3, H335
Monoammonium Phosphate	(CAS No) 7722-76-1		Eye Irrit. 2B, H320 STOT SE 3, H335
potassium sulfate	(CAS No) 7778-80-5		Not classified
Calcium Phosphate	(CAS No) 7758-23-8		Skin Irrit. 2, H315 Eye Irrit. 2B, H320 STOT SE 3, H335
Dicalcium Phosphate	(CAS No) 7757-93-9		Eye Irrit. 2B, H320
Pacmix	(CAS No) None		Skin Irrit. 2, H315 Eye Irrit. 2B, H320 STOT SE 3, H335
ammonium sulfate	(CAS No) 7783-20-2		Eye Irrit. 2B, H320 STOT SE 3, H335
Wax	(CAS No) 64771-72-8		Not classified
magnesium stearate	(CAS No) 557-04-0		Not classified
Ferrous Sulfate Monohydrate	(CAS No) 17375-41-6		Acute Tox. 4 (Oral), H302 Eye Irrit. 2B, H320 STOT SE 3, H335

Full text of H-statements: see section 16

SECTION 4: First aid measures

4.1. Description of first aid measures

- First-aid measures general : Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label where possible).
- First-aid measures after inhalation : Allow breathing of fresh air. Allow the victim to rest.
- First-aid measures after skin contact : Remove affected clothing and wash all exposed skin area with mild soap and water, followed by warm water rinse.
- First-aid measures after eye contact : Rinse immediately with plenty of water. Obtain medical attention if pain, blinking or redness persist.
- First-aid measures after ingestion : Rinse mouth. Do NOT induce vomiting. Obtain emergency medical attention.

4.2. Most important symptoms and effects, both acute and delayed

- Symptoms/injuries : Not expected to present a significant hazard under anticipated conditions of normal use.

4.3. Indication of any immediate medical attention and special treatment needed

No additional information available

SECTION 5: Firefighting measures

5.1. Extinguishing media

- Suitable extinguishing media : Foam. Dry powder. Carbon dioxide. Water spray. Sand.
- Unsuitable extinguishing media : Do not use a heavy water stream.

5.2. Special hazards arising from the substance or mixture

- Reactivity : Stable.

5.3. Advice for firefighters

- Firefighting instructions : Use water spray or fog for cooling exposed containers. Exercise caution when fighting any chemical fire. Prevent fire-fighting water from entering environment.
- Protection during firefighting : Do not enter fire area without proper protective equipment, including respiratory protection.

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SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

Emergency procedures : Evacuate unnecessary personnel.

6.1.2. For emergency responders

Protective equipment : Equip cleanup crew with proper protection.

Emergency procedures : Ventilate area.

6.2. Environmental precautions

Prevent entry to sewers and public waters. Notify authorities if liquid enters sewers or public waters.

6.3. Methods and material for containment and cleaning up

Methods for cleaning up : On land, sweep or shovel into suitable containers. Minimize generation of dust. Store away from other materials.

6.4. Reference to other sections

See Heading 8. Exposure controls and personal protection.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling : Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Provide good ventilation in process area to prevent formation of vapour.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions : Keep only in the original container in a cool, well ventilated place away from : Keep container closed when not in use.

Incompatible products : Strong bases. Strong acids.

Incompatible materials : Sources of ignition. Direct sunlight.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

magnesium stearate (557-04-0)		
ACGIH	ACGIH TWA (mg/m ³)	10 mg/m ³

8.2. Exposure controls

Personal protective equipment : Avoid all unnecessary exposure.

Hand protection : Wear protective gloves.

Eye protection : Chemical goggles or safety glasses.

Respiratory protection : Wear appropriate mask.

Other information : Do not eat, drink or smoke during use.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state : Solid

Appearance : Mottled grey.

Colour : Gray

Odour : characteristic

Odour threshold : No data available

pH : 7.36

Melting point : No data available

Freezing point : No data available

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Boiling point	: No data available
Flash point	: Non-flammable
Relative evaporation rate (butylacetate=1)	: No data available
Flammability (solid, gas)	: No data available
Explosive limits	: No data available
Explosive properties	: No data available
Oxidising properties	: No data available
Vapour pressure	: No data available
Relative density	: No data available
Relative vapour density at 20 °C	: No data available
Density	: 2.97 g/cm ³
Solubility	: Soluble and slowly soluble.
Log Pow	: No data available
Auto-ignition temperature	: No data available
Decomposition temperature	: No data available
Viscosity	: No data available
Viscosity, kinematic	: No data available
Viscosity, dynamic	: No data available

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

Stable.

10.2. Chemical stability

Not established.

10.3. Possibility of hazardous reactions

Not established.

10.4. Conditions to avoid

Extremely high temperatures. Direct sunlight. Extremely high or low temperatures.

10.5. Incompatible materials

Strong acids. Becomes corrosive to metals when wet. Strong bases.

10.6. Hazardous decomposition products

During high temperature in fire conditions. The product may reach melting point and decompose to release NH₃, SO_x, PO_x, or CN. fume. Carbon monoxide. Carbon dioxide.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity : Not classified

formaldehyde/urea,resins (9011-05-6)	
LD50 oral rat	8394 mg/kg (Rat)
LD50 dermal rat	> 2100 mg/kg (Rat)
ATE US (oral)	8394.000 mg/kg bodyweight
Monoammonium Phosphate (7722-76-1)	
LD50 oral rat	5750 mg/kg (Rat)
LD50 dermal rat	> mg/kg
LD50 dermal rabbit	> 7940 mg/kg (Rabbit)
ATE US (oral)	5750.000 mg/kg bodyweight
Calcium Phosphate (7758-23-8)	
LD50 oral rat	17500 mg/kg (Rat; Literature)
LD50 dermal rabbit	> 2000 mg/kg (Rabbit; Literature)

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Calcium Phosphate (7758-23-8)	
ATE US (oral)	17500.000 mg/kg bodyweight
Dicalcium Phosphate (7757-93-9)	
LD50 oral rat	10000 mg/kg (Rat)
LD50 dermal rat	7940 mg/kg (Rat)
ATE US (oral)	10000.000 mg/kg bodyweight
ATE US (dermal)	7940.000 mg/kg bodyweight
ammonium sulfate (7783-20-2)	
LD50 oral rat	2840 mg/kg (Rat)
LD50 dermal rat	> 2000 mg/kg
ATE US (oral)	2840.000 mg/kg bodyweight
potassium sulfate (7778-80-5)	
LD50 oral rat	6600 mg/kg (Rat)
ATE US (oral)	6600.000 mg/kg bodyweight
Ferrous Sulfate Monohydrate (17375-41-6)	
LD50 oral rat	319 mg/kg
ATE US (oral)	319.000 mg/kg bodyweight
magnesium stearate (557-04-0)	
LD50 oral rat	> 5000 mg/kg (Rat)

Skin corrosion/irritation	: Causes skin irritation. pH: 7.36
Serious eye damage/irritation	: Causes eye irritation. pH: 7.36
Respiratory or skin sensitisation	: Not classified
Germ cell mutagenicity	: Not classified Based on available data, the classification criteria are not met
Carcinogenicity	: Not classified
Reproductive toxicity	: Not classified Based on available data, the classification criteria are not met
Specific target organ toxicity (single exposure)	: May cause respiratory irritation.
Specific target organ toxicity (repeated exposure)	: Not classified
Aspiration hazard	: Not classified
Potential adverse human health effects and symptoms	: Based on available data, the classification criteria are not met.

SECTION 12: Ecological information

12.1. Toxicity

formaldehyde/urea,resins (9011-05-6)	
LC50 fish 1	> 500 mg/l (96 h; Leuciscus idus; Estimated value)
EC50 Daphnia 1	65000 mg/l (Daphnia magna; QSAR)
Monoammonium Phosphate (7722-76-1)	
LC50 fish 1	155 ppm (96 h; Pimephales promelas)
ammonium sulfate (7783-20-2)	
LC50 fish 1	126 mg/l (96 h; Poecilia reticulata)
EC50 Daphnia 1	202 mg/l (96 h; Daphnia magna)

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ammonium sulfate (7783-20-2)	
LC50 fish 2	250 - 480 mg/l (96 h; Brachydanio rerio)
EC50 Daphnia 2	433 mg/l (50 h; Daphnia magna)
TLM fish 1	1290 ppm (96 h; Gambusia affinis)
potassium sulfate (7778-80-5)	
LC50 fish 1	1692.4 mg/l (96 h; Alburnus alburnus)
LC50 other aquatic organisms 1	> 1000 mg/l (96 h)
EC50 Daphnia 1	890 mg/l (48 h; Daphnia magna; Static system)
LC50 fish 2	653 - 796 mg/l (96 h; Lepomis macrochirus)
EC50 Daphnia 2	1180 mg/l (96 h; Crustacea)
TLM fish 1	3550 ppm (96 h; Lepomis sp.)
Threshold limit other aquatic organisms 1	> 1000 mg/l (96 h)
Threshold limit algae 1	2900 mg/l (72 h; Scenedesmus subspicatus)

12.2. Persistence and degradability

Best-Tabs 20-10-5 Controlled Release Fertilizer Tablets	
Persistence and degradability	Not established.
formaldehyde/urea,resins (9011-05-6)	
Persistence and degradability	Not readily biodegradable in water. Not established.
Monoammonium Phosphate (7722-76-1)	
Persistence and degradability	Biodegradability in water: no data available. Not established.
Calcium Phosphate (7758-23-8)	
Persistence and degradability	Biodegradability: not applicable. Not established.
Biochemical oxygen demand (BOD)	Not applicable
Chemical oxygen demand (COD)	Not applicable
ThOD	Not applicable
BOD (% of ThOD)	Not applicable
Dicalcium Phosphate (7757-93-9)	
Persistence and degradability	Biodegradability: not applicable. Not established.
Biochemical oxygen demand (BOD)	Not applicable
Chemical oxygen demand (COD)	Not applicable
ThOD	Not applicable
BOD (% of ThOD)	Not applicable
ammonium sulfate (7783-20-2)	
Persistence and degradability	Biodegradability in water: no data available. Not established.
potassium sulfate (7778-80-5)	
Persistence and degradability	Biodegradability: not applicable. Not established.
Biochemical oxygen demand (BOD)	Not applicable
Chemical oxygen demand (COD)	Not applicable
ThOD	Not applicable
BOD (% of ThOD)	Not applicable
Ferrous Sulfate Monohydrate (17375-41-6)	
Persistence and degradability	Not established.
Pacmix (None)	
Persistence and degradability	Not established.
magnesium stearate (557-04-0)	
Persistence and degradability	Biodegradability in water: no data available. Not established.
Wax (64771-72-8)	
Persistence and degradability	Not established.

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12.3. Bioaccumulative potential

Best-Tabs 20-10-5 Controlled Release Fertilizer Tablets	
Bioaccumulative potential	Not established.
formaldehyde/urea, resins (9011-05-6)	
Bioaccumulative potential	No bioaccumulation data available. Not established.
Monoammonium Phosphate (7722-76-1)	
Bioaccumulative potential	Not bioaccumulative. Not established.
Calcium Phosphate (7758-23-8)	
Bioaccumulative potential	No bioaccumulation data available. Not established.
Dicalcium Phosphate (7757-93-9)	
Bioaccumulative potential	Not bioaccumulative. Not established.
ammonium sulfate (7783-20-2)	
Log Pow	-5.1
Bioaccumulative potential	Bioaccumulation: not applicable. Not established.
potassium sulfate (7778-80-5)	
Bioaccumulative potential	Not bioaccumulative. Not established.
Ferrous Sulfate Monohydrate (17375-41-6)	
Bioaccumulative potential	Not established.
Pacmix (None)	
Bioaccumulative potential	Not established.
magnesium stearate (557-04-0)	
Log Pow	14.34 (Estimated value)
Bioaccumulative potential	Not established.
Wax (64771-72-8)	
Bioaccumulative potential	Not established.

12.4. Mobility in soil

No additional information available

12.5. Other adverse effects

Effect on the global warming : No known ecological damage caused by this product.

Other information : Avoid release to the environment.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Waste disposal recommendations : Dispose in a safe manner in accordance with local/national regulations.

Ecology - waste materials : Avoid release to the environment.

SECTION 14: Transport information

Department of Transportation (DOT)

In accordance with DOT

Not regulated for transport

TDG

No additional information available

Transport by sea

No additional information available

Air transport

No additional information available

Best-Tabs 20-10-5 Controlled Release Fertilizer Tablets

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

SECTION 15: Regulatory information

15.1. US Federal regulations

All components of this product are listed, or excluded from listing, on the United States Environmental Protection Agency Toxic Substances Control Act (TSCA) inventory except for:

Ferrous Sulfate Monohydrate	CAS No 17375-41-6	%
Pacmix	CAS No None	%

This product or mixture does not contain a toxic chemical or chemicals in excess of the applicable de minimis concentration as specified in 40 CFR §372.38(a) subject to the reporting requirements of section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372.

15.2. International regulations

CANADA

No additional information available

EU-Regulations

No additional information available

National regulations

No additional information available

15.3. US State regulations

California Proposition 65 - This product does not contain any substances known to the state of California to cause cancer, developmental and/or reproductive harm

SECTION 16: Other information

Data sources : REGULATION (EC) No 1272/2008 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 16 December 2008 on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006.

Other information : None.

Full text of H-statements:

Acute Tox. 4 (Oral)	Acute toxicity (oral), Category 4
Eye Irrit. 2B	Serious eye damage/eye irritation, Category 2B
Skin Irrit. 2	Skin corrosion/irritation, Category 2
STOT SE 3	Specific target organ toxicity — Single exposure, Category 3, Respiratory tract irritation
H302	Harmful if swallowed
H315	Causes skin irritation
H320	Causes eye irritation
H335	May cause respiratory irritation

SDS US (GHS HazCom 2012)

Disclaimer: This information relates to the specific material designated and may not be valid for such material used in combination with any other materials or in any process. Such information is to the best of our knowledge and belief, accurate and reliable as of the date compiled. However, no representation, warranty or guarantee is made as to its accuracy, reliability or completeness. NO WARRANTY OF MERCHANTABILITY, FITNESS FOR ANY PARTICULAR PURPOSE, OR ANY OTHER WARRANTY, EXPRESS OR IMPLIED, IS MADE CONCERNING THE INFORMATION HEREIN PROVIDED. It is the user's responsibility to satisfy himself as to the suitability and completeness of such information for his own particular use. We do not accept liability for any loss or damage that may occur from the use of this information nor do we offer warranty against patent infringement.

AGROPELL by Simplot Ammonium Phosphate 16-20-0 with 13% Sulfur

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Product form : Mixture
Product name : AGROPELL by Simplot Ammonium Phosphate 16-20-0 with 13% Sulfur
Product code : M14060

1.2. Relevant identified uses of the substance or mixture and uses advised against

1.3. Details of the supplier of the safety data sheet

JR Simplot Company
Boise, ID 83707
T 1-208-336-2110

1.4. Emergency telephone number

Emergency number : CHEMTREC 1-800-424-9300

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification (GHS-US)

Eye Irrit. 2B H320
STOT SE 3 H335

Full text of H-phrases: see section 16

2.2. Label elements

GHS-US labeling

Hazard pictograms (GHS-US) :



GHS07

Signal word (GHS-US) :

Warning

Hazard statements (GHS-US) :

H320 - Causes eye irritation
H335 - May cause respiratory irritation

Precautionary statements (GHS-US) :

P261 - Avoid breathing dust/fume/gas/mist/vapors/spray
P264 - Wash ... thoroughly after handling
P271 - Use only outdoors or in a well-ventilated area
P304 + P340 - If inhaled: Remove person to fresh air and keep comfortable for breathing
P305+P351+P338 - If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P312 - Call a poison center/doctor/... if you feel unwell
P337 + P313 - If eye irritation persists: Get medical advice/attention
P403 + P233 - Store in a well-ventilated place. Keep container tightly closed
P405 - Store locked up
P501 - Dispose of contents/container to ...

2.3. Other hazards

No additional information available

2.4. Unknown acute toxicity (GHS-US)

No data available

SECTION 3: Composition/information on ingredients

3.1. Substance

Not applicable

3.2. Mixture

AGROPELL by Simplot Ammonium Phosphate 16-20-0 with 13% Sulfur

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Name	Product identifier	%	Classification (GHS-US)
ammonium sulfate	(CAS No) 7783-20-2		Not classified
Monoammonium Phosphate	(CAS No) 7722-76-1		Eye Irrit. 2B, H320 STOT SE 3, H335
Sand			STOT SE 3, H335
wax (paraffins- petroleum)	(CAS No) 64771-72-8		Not classified

SECTION 4: First aid measures

4.1. Description of first aid measures

- First-aid measures general : Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label where possible).
- First-aid measures after inhalation : Remove to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER/doctor/physician if you feel unwell. Assure fresh air breathing. Allow the victim to rest.
- First-aid measures after skin contact : Remove affected clothing and wash all exposed skin area with mild soap and water, followed by warm water rinse.
- First-aid measures after eye contact : IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Rinse immediately with plenty of water. Obtain medical attention if pain, blinking or redness persist.
- First-aid measures after ingestion : Rinse mouth. Do NOT induce vomiting. Obtain emergency medical attention.

4.2. Most important symptoms and effects, both acute and delayed

- Symptoms/injuries : Not expected to present a significant hazard under anticipated conditions of normal use.
- Symptoms/injuries after inhalation : May cause respiratory irritation.
- Symptoms/injuries after eye contact : Causes eye irritation.

4.3. Indication of any immediate medical attention and special treatment needed

No additional information available

SECTION 5: Firefighting measures

5.1. Extinguishing media

- Suitable extinguishing media : Foam. Dry powder. Carbon dioxide. Water spray. Sand.
- Unsuitable extinguishing media : Do not use a heavy water stream.

5.2. Special hazards arising from the substance or mixture

- Reactivity : Stable.

5.3. Advice for firefighters

- Firefighting instructions : Use water spray or fog for cooling exposed containers. Exercise caution when fighting any chemical fire. Prevent fire-fighting water from entering environment.
- Protection during firefighting : Do not enter fire area without proper protective equipment, including respiratory protection.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

- Emergency procedures : Evacuate unnecessary personnel.

6.1.2. For emergency responders

- Protective equipment : Equip cleanup crew with proper protection.
- Emergency procedures : Ventilate area.

6.2. Environmental precautions

Prevent entry to sewers and public waters. Notify authorities if liquid enters sewers or public waters.

6.3. Methods and material for containment and cleaning up

- Methods for cleaning up : On land, sweep or shovel into suitable containers. Minimize generation of dust. Store away from other materials.

6.4. Reference to other sections

See Heading 8. Exposure controls and personal protection.

AGROPELL by Simplot Ammonium Phosphate 16-20-0 with 13% Sulfur

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling : Avoid breathing dust/fume/gas/mist/vapors/spray. Use only outdoors or in a well-ventilated area. Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Provide good ventilation in process area to prevent formation of vapor.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions : Keep container tightly closed. Keep only in the original container in a cool, well ventilated place away from : Keep container closed when not in use.

Incompatible products : Strong bases. Strong acids.

Incompatible materials : Sources of ignition. Direct sunlight.

Storage area : BULK STORAGE PRECAUTION: This product is not suitable for storage in overhead/upright free standing bins. The J.R. Simplot Company will not warrant or guarantee product stored in this manner and will not be subject to any claims against set-up product, damaged bins, labor to remove product or other damages and liabilities. An example of overhead/upright bins include but not limited to Stor-King, Wheatland, Meridian and others. This warning includes bins that have special "Fertilizer Coatings" to the internal walls to promote free flowing of the contents.

7.3. Specific end use(s)

No additional information available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

No additional information available

8.2. Exposure controls

Personal protective equipment : Avoid all unnecessary exposure.

Hand protection : Wear protective gloves.

Eye protection : Chemical goggles or safety glasses.

Respiratory protection : Wear appropriate mask.

Other information : Do not eat, drink or smoke during use.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state : Solid

Appearance : Granules.

Color : Light colored

Odor : characteristic

Odor threshold : No data available

pH : 3.5 - 5

Relative evaporation rate (butyl acetate=1) : No data available

Melting point : No data available

Freezing point : No data available

Boiling point : No data available

Flash point : No data available

Auto-ignition temperature : No data available

Decomposition temperature : No data available

Flammability (solid, gas) : No data available

Vapor pressure : No data available

Relative vapor density at 20 °C : No data available

Relative density : No data available

Density : 62-63 lbs/ft3

Solubility : Complete.
Water: Solubility in water of component(s) of the mixture :
• : 77 g/100ml • : 38 g/100ml • :

AGROPELL by Simplot Ammonium Phosphate 16-20-0 with 13% Sulfur

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Log Pow : No data available
Log Kow : No data available
Viscosity, kinematic : No data available
Viscosity, dynamic : No data available
Explosive properties : No data available
Oxidizing properties : No data available
Explosive limits : No data available

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

Stable.

10.2. Chemical stability

Not established.

10.3. Possibility of hazardous reactions

Not established.

10.4. Conditions to avoid

Direct sunlight. Extremely high or low temperatures.

10.5. Incompatible materials

Strong acids. Strong bases.

10.6. Hazardous decomposition products

fume. Carbon monoxide. Carbon dioxide.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity : Not classified

ammonium sulfate (7783-20-2)	
LD50 oral rat	2840 mg/kg (Rat)
LD50 dermal rat	> 2000 mg/kg
ATE US (oral)	2840.00000000 mg/kg body weight

Monoammonium Phosphate (7722-76-1)	
LD50 oral rat	5750 mg/kg (Rat)
LD50 dermal rat	> mg/kg
LD50 dermal rabbit	> 7940 mg/kg (Rabbit)
ATE US (oral)	5750.00000000 mg/kg body weight

wax (paraffins- petroleum) (64771-72-8)	
LD50 oral rat	> 5000 mg/kg (Rat)
LD50 dermal rabbit	> 2000 mg/kg (Rabbit)

Skin corrosion/irritation : Not classified
pH: 3.5 - 5

Serious eye damage/irritation : Causes eye irritation.
pH: 3.5 - 5

Respiratory or skin sensitization : Not classified

Germ cell mutagenicity : Not classified
Based on available data, the classification criteria are not met

Carcinogenicity : Not classified

Reproductive toxicity : Not classified
Based on available data, the classification criteria are not met

AGROPELL by Simplot Ammonium Phosphate 16-20-0 with 13% Sulfur

Safety Data Sheet

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Specific target organ toxicity (single exposure)	: May cause respiratory irritation.
Specific target organ toxicity (repeated exposure)	: Not classified Based on available data, the classification criteria are not met
Aspiration hazard	: Not classified Based on available data, the classification criteria are not met
Potential Adverse human health effects and symptoms	: Based on available data, the classification criteria are not met.
Symptoms/injuries after inhalation	: May cause respiratory irritation.
Symptoms/injuries after eye contact	: Causes eye irritation.

SECTION 12: Ecological information

12.1. Toxicity

ammonium sulfate (7783-20-2)	
LC50 fish 1	126 mg/l (96 h; Poecilia reticulata)
EC50 Daphnia 1	202 mg/l (96 h; Daphnia magna)
LC50 fish 2	250 - 480 mg/l (96 h; Brachydanio rerio)
EC50 Daphnia 2	433 mg/l (50 h; Daphnia magna)
TLM fish 1	1290 ppm (96 h; Gambusia affinis)

Monoammonium Phosphate (7722-76-1)	
LC50 fish 1	155 ppm (96 h; Pimephales promelas)

12.2. Persistence and degradability

AGROPELL by Simplot Ammonium Phosphate 16-20-0 with 13% Sulfur	
Persistence and degradability	Not established.

ammonium sulfate (7783-20-2)	
Persistence and degradability	Biodegradability in water: no data available. Not established.

Monoammonium Phosphate (7722-76-1)	
Persistence and degradability	Biodegradability in water: no data available. Not established.

Sand	
Persistence and degradability	Not established.

wax (paraffins- petroleum) (64771-72-8)	
Persistence and degradability	Readily biodegradable in water.

12.3. Bioaccumulative potential

AGROPELL by Simplot Ammonium Phosphate 16-20-0 with 13% Sulfur	
Bioaccumulative potential	Not established.

ammonium sulfate (7783-20-2)	
Log Pow	-5.1
Bioaccumulative potential	Bioaccumulation: not applicable. Not established.

Monoammonium Phosphate (7722-76-1)	
Bioaccumulative potential	Not bioaccumulative. Not established.

Sand	
Bioaccumulative potential	Not established.

wax (paraffins- petroleum) (64771-72-8)	
Bioaccumulative potential	No bioaccumulation data available.

12.4. Mobility in soil

No additional information available

AGROPELL by Simplot Ammonium Phosphate 16-20-0 with 13% Sulfur

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

12.5. Other adverse effects

Effect on ozone layer : No additional information available
Effect on the global warming : No known ecological damage caused by this product.
Other information : Avoid release to the environment.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Waste disposal recommendations : Dispose in a safe manner in accordance with local/national regulations.
Ecology - waste materials : Avoid release to the environment.

SECTION 14: Transport information

In accordance with DOT
Not regulated for transport

Additional information

Other information : No supplementary information available.

ADR

Transport document description :

Transport by sea

No additional information available

Air transport

No additional information available

SECTION 15: Regulatory information

15.1. US Federal regulations

All components of this product are listed on the Toxic Substances Control Act (TSCA) inventory except for:

Sand	CAS No	C \geq 5.00% ; C \leq 10.00%
wax (paraffins- petroleum)	CAS No 64771-72-8	C \leq 1.00%

This product or mixture does not contain a toxic chemical or chemicals in excess of the applicable de minimis concentration as specified in 40 CFR §372.38(a) subject to the reporting requirements of section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372.

Sand
Not listed on the United States TSCA (Toxic Substances Control Act) inventory

15.2. International regulations

CANADA

No additional information available

EU-Regulations

No additional information available

Classification according to Regulation (EC) No. 1272/2008 [CLP]

Classification according to Directive 67/548/EEC or 1999/45/EC

Not classified

15.2.2. National regulations

No additional information available

15.3. US State regulations

California Proposition 65 - This product does not contain any substances known to the state of California to cause cancer and/or reproductive harm

AGROPELL by Simplot Ammonium Phosphate 16-20-0 with 13% Sulfur

Safety Data Sheet

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SECTION 16: Other information

Data sources : REGULATION (EC) No 1272/2008 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 16 December 2008 on classification, labeling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006.

Other information : None.

Full text of H-phrases: see section 16:

Eye Irrit. 2B	Serious eye damage/eye irritation Category 2B
STOT SE 3	Specific target organ toxicity (single exposure) Category 3
H320	Causes eye irritation
H335	May cause respiratory irritation

SDS US (GHS HazCom 2012)

Disclaimer: This information relates to the specific material designated and may not be valid for such material used in combination with any other materials or in any process. Such information is to the best of our knowledge and belief, accurate and reliable as of the date compiled. However, no representation, warranty or guarantee is made as to its accuracy, reliability or completeness. NO WARRANTY OF MERCHANTABILITY, FITNESS FOR ANY PARTICULAR PURPOSE, OR ANY OTHER WARRANTY, EXPRESS OR IMPLIED, IS MADE CONCERNING THE INFORMATION HEREIN PROVIDED. It is the user's responsibility to satisfy himself as to the suitability and completeness of such information for his own particular use. We do not accept liability for any loss or damage that may occur from the use of this information nor do we offer warranty against patent infringement.

10/10/20

Simplot Ammonium Sulfate 21-0-0 +24(S)

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

SECTION 1: Identification

1.1. Identification

Product form : Mixture
Trade name : Simplot Ammonium Sulfate 21-0-0 +24(S)
Product code : M11070

1.2. Relevant identified uses of the substance or mixture and uses advised against

No additional information available

1.3. Details of the supplier of the safety data sheet

JR Simplot Company
P.O. Box 70013
Boise, ID 83707
T 1-208-336-2110

1.4. Emergency telephone number

Emergency number : CHEMTREC 1-800-424-9300

SECTION 2: Hazard(s) identification

2.1. Classification of the substance or mixture

GHS-US classification

Not classified

2.2. Label elements

GHS-US labelling

No labelling applicable

2.3. Other hazards

No additional information available

2.4. Unknown acute toxicity (GHS US)

Not applicable

SECTION 3: Composition/information on ingredients

3.1. Substance

Not applicable

3.2. Mixture

Name	Product identifier	%	GHS-US classification
ammonium sulfate (7783-20-2)	(CAS No) 7783-20-2		Not classified
Anti-caking agent			Not classified

Full text of H-statements: see section 16

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures general : Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label where possible).
First-aid measures after inhalation : Allow breathing of fresh air. Allow the victim to rest.
First-aid measures after skin contact : Remove affected clothing and wash all exposed skin area with mild soap and water, followed by warm water rinse.
First-aid measures after eye contact : Rinse immediately with plenty of water. Obtain medical attention if pain, blinking or redness persist.
First-aid measures after ingestion : Rinse mouth. Do NOT induce vomiting. Obtain emergency medical attention.

4.2. Most important symptoms and effects, both acute and delayed

Symptoms/injuries : Not expected to present a significant hazard under anticipated conditions of normal use.

4.3. Indication of any immediate medical attention and special treatment needed

No additional information available

Simplot Ammonium Sulfate 21-0-0 +24(S)

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media : Foam. Dry powder. Carbon dioxide. Water spray. Sand.
Unsuitable extinguishing media : Do not use a heavy water stream.

5.2. Special hazards arising from the substance or mixture

No additional information available

5.3. Advice for firefighters

Firefighting instructions : Use water spray or fog for cooling exposed containers. Exercise caution when fighting any chemical fire. Prevent fire-fighting water from entering environment.
Protection during firefighting : Do not enter fire area without proper protective equipment, including respiratory protection.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

Emergency procedures : Evacuate unnecessary personnel.

6.1.2. For emergency responders

Protective equipment : Equip cleanup crew with proper protection.
Emergency procedures : Ventilate area.

6.2. Environmental precautions

Prevent entry to sewers and public waters. Notify authorities if liquid enters sewers or public waters.

6.3. Methods and material for containment and cleaning up

Methods for cleaning up : On land, sweep or shovel into suitable containers. Minimize generation of dust. Store away from other materials.

6.4. Reference to other sections

See Heading 8. Exposure controls and personal protection.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling : Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Provide good ventilation in process area to prevent formation of vapour.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions : Keep only in the original container in a cool, well ventilated place away from : Keep container closed when not in use.
Incompatible products : Strong bases. Strong acids.
Incompatible materials : Sources of ignition. Direct sunlight.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

No additional information available

8.2. Exposure controls

Personal protective equipment : Avoid all unnecessary exposure.
Hand protection : Wear protective gloves.
Eye protection : Chemical goggles or safety glasses.
Respiratory protection : Wear appropriate mask.
Other information : Do not eat, drink or smoke during use.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state : Solid
Appearance : White solid. Crystals.

Simplot Ammonium Sulfate 21-0-0 +24(S)

Safety Data Sheet

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Colour	: White
Odour	: odourless
Odour threshold	: No data available
pH	: 5.5 - 6
Melting point	: >= °C
Freezing point	: No data available
Boiling point	: 235 °C
Flash point	: Non-Flammable
Relative evaporation rate (butylacetate=1)	: No data available
Flammability (solid, gas)	: No data available
Explosive limits	: No data available
Explosive properties	: No data available
Oxidising properties	: No data available
Vapour pressure	: No data available
Relative density	: No data available
Relative vapour density at 20 °C	: No data available
Density	: 66 - 69 lbs/ft ³
Solubility	: Water: Solubility in water of component(s) of the mixture : • ammonium sulfate (7783-20-2): 77 g/100ml
Log Pow	: No data available
Auto-ignition temperature	: No data available
Decomposition temperature	: No data available
Viscosity	: No data available
Viscosity, kinematic	: No data available
Viscosity, dynamic	: No data available

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

No additional information available

10.2. Chemical stability

Stable.

10.3. Possibility of hazardous reactions

Not established.

10.4. Conditions to avoid

Direct sunlight. Extremely high or low temperatures.

10.5. Incompatible materials

Oxidizers. Strong acids. Strong bases.

10.6. Hazardous decomposition products

The product may reach melting point and decompose to release NH₃, SO_x, PO_x, or CN. fume. Carbon monoxide. Carbon dioxide.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity : Not classified

Simplot Ammonium Sulfate 21-0-0 +24(S)	
LD50 oral rat	640 - 4250 mg/kg
LD50 dermal rat	> 2000 mg/kg
ATE US (oral)	640.000 mg/kg bodyweight
ammonium sulfate (7783-20-2) (7783-20-2)	
LD50 oral rat	2840 mg/kg (Rat)

Simplot Ammonium Sulfate 21-0-0 +24(S)

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

ammonium sulfate (7783-20-2) (7783-20-2)	
LD50 dermal rat	> 2000 mg/kg
ATE US (oral)	2840.000 mg/kg bodyweight
Skin corrosion/irritation	: Not classified pH: 5.5 - 6
Serious eye damage/irritation	: Not classified pH: 5.5 - 6
Respiratory or skin sensitisation	: Not classified
Germ cell mutagenicity	: Not classified
Carcinogenicity	: Not classified Based on available data, the classification criteria are not met
Reproductive toxicity	: Not classified Based on available data, the classification criteria are not met
Specific target organ toxicity (single exposure)	: Not classified
Specific target organ toxicity (repeated exposure)	: Not classified
Aspiration hazard	: Not classified
Potential adverse human health effects and symptoms	: Based on available data, the classification criteria are not met.

SECTION 12: Ecological information

12.1. Toxicity

ammonium sulfate (7783-20-2) (7783-20-2)	
LC50 fish 1	126 mg/l (96 h; Poecilia reticulata)
EC50 Daphnia 1	202 mg/l (96 h; Daphnia magna)
LC50 fish 2	250 - 480 mg/l (96 h; Brachydanio rerio)
EC50 Daphnia 2	433 mg/l (50 h; Daphnia magna)
TLM fish 1	1290 ppm (96 h; Gambusia affinis)

12.2. Persistence and degradability

Simplot Ammonium Sulfate 21-0-0 +24(S)	
Persistence and degradability	Not established.
Anti-caking agent	
Persistence and degradability	Not established.
ammonium sulfate (7783-20-2) (7783-20-2)	
Persistence and degradability	Biodegradability in water: no data available. Not established.

12.3. Bioaccumulative potential

Simplot Ammonium Sulfate 21-0-0 +24(S)	
Bioaccumulative potential	Not established.
Anti-caking agent	
Bioaccumulative potential	Not established.
ammonium sulfate (7783-20-2) (7783-20-2)	
Log Pow	-5.1
Bioaccumulative potential	Bioaccumulation: not applicable. Not established.

12.4. Mobility in soil

No additional information available

12.5. Other adverse effects

Effect on the global warming : No known ecological damage caused by this product.

Other information : Avoid release to the environment.

Simplot Ammonium Sulfate 21-0-0 +24(S)

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Waste disposal recommendations : Dispose in a safe manner in accordance with local/national regulations.
Ecology - waste materials : Avoid release to the environment.

SECTION 14: Transport information

Department of Transportation (DOT)

In accordance with DOT
Not regulated for transport

TDG

No additional information available

Transport by sea

No additional information available

Air transport

No additional information available

SECTION 15: Regulatory information

15.1. US Federal regulations

Simplot Ammonium Sulfate 21-0-0 +24(S)

Not listed on the United States TSCA (Toxic Substances Control Act) inventory

All components of this product are listed, or excluded from listing, on the United States Environmental Protection Agency Toxic Substances Control Act (TSCA) inventory except for:

Anti-caking agent	CAS No	%
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This product or mixture does not contain a toxic chemical or chemicals in excess of the applicable de minimis concentration as specified in 40 CFR §372.38(a) subject to the reporting requirements of section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372.

15.2. International regulations

CANADA

No additional information available

EU-Regulations

No additional information available

National regulations

No additional information available

15.3. US State regulations

California Proposition 65 - This product does not contain any substances known to the state of California to cause cancer, developmental and/or reproductive harm

SECTION 16: Other information

Data sources : REGULATION (EC) No 1272/2008 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 16 December 2008 on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006.

Other information : None.

SDS US (GHS HazCom 2012)

Disclaimer: This information relates to the specific material designated and may not be valid for such material used in combination with any other materials or in any process. Such information is to the best of our knowledge and belief, accurate and reliable as of the date compiled. However, no representation, warranty or guarantee is made as to its accuracy, reliability or completeness. NO WARRANTY OF MERCHANTABILITY, FITNESS FOR ANY PARTICULAR PURPOSE, OR ANY OTHER WARRANTY, EXPRESS OR IMPLIED, IS MADE CONCERNING THE INFORMATION HEREIN PROVIDED. It is the user's responsibility to satisfy himself as to the suitability and completeness of such information for his own particular use. We do not accept liability for any loss or damage that may occur from the use of this information nor do we offer warranty against patent infringement.



Issue Date 12-Nov-2014

Revision Date 11-Dec-2014

Version 1

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

Product identifier

Product Name Gordon's **ATRIMMEC®** Plant Growth Regulator

Other means of identification

Product Code PBI FP 662-5

EPA Pesticide Registration Number 2217-776

Recommended use of the chemical and restrictions on use

Recommended Use Growth regulator.

Uses advised against No information available.

Details of the supplier of the safety data sheet

Supplier
PBI Gordon Corporation
1217 West 12th Street
Kansas City, MO 64101

Manufacturer
PBI Gordon Corporation
1217 West 12th Street
Kansas City, MO 64101

Company Name
PBI Gordon Corporation
1217 West 12th Street
Kansas City, MO 64101

Emergency telephone number

Emergency Telephone Chemtrec 1-800-424-9300

2. HAZARDS IDENTIFICATION

Classification


OSHA Regulatory Status

This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Acute toxicity - Dermal	Category 3
Skin sensitization	Category 1

Label elements

Emergency Overview

Danger		
Hazard statements		
Toxic in contact with skin. May cause an allergic skin reaction.		
		
Appearance Liquid	Physical state Liquid	Odor Odorless

Precautionary Statements - Prevention

- Wear protective gloves/protective clothing/eye protection/face protection
- Avoid breathing dust/fume/gas/mist/vapors/spray
- Contaminated work clothing should not be allowed out of the workplace
- Keep away from heat/sparks/open flames/hot surfaces. — No smoking
- Keep container tightly closed

Precautionary Statements - Response

- Call a POISON CENTER or doctor/physician if you feel unwell
- Wash contaminated clothing before reuse
- If skin irritation or rash occurs: Get medical advice/attention
- IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower

Precautionary Statements - Storage

- Store locked up
- Store in a well-ventilated place. Keep cool

Precautionary Statements - Disposal

- Dispose of contents/container to an approved waste disposal plant

Hazards not otherwise classified (HNOC)

Have the product label with you when calling a poison control center or doctor or going in for treatment. You may also contact 1-877-800-5556 for emergency medical treatment advice.

The low flash point of this product is due to a minor component in the mixture. Based on independent laboratory testing of similar products, this product would not sustain combustion as specified in DOT Regulation 49 CFR 173 Appendix H; however OSHA HCS 2012 flammable classifications are solely based on tested mixture flash points and boiling points.

Other Information

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS No.	Weight-%
2,3:4,6-Bis-O-(1-methylethylidene)-alpha-L-xylo-2-h exulofuranosonic acid, sodium salt (Dikegulac sodium)	52508-35-7	18.5
Trade Secret	Proprietary	0-10*

* The exact percentage (concentration) of composition has been withheld as a trade secret

4. FIRST AID MEASURES

First aid measures

- General advice** In case of accident or unwellness, seek medical advice immediately (show directions for use or safety data sheet if possible). If symptoms persist, call a physician.
- Eye contact** Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. If symptoms persist, call a physician. Immediately flush with plenty of water. After initial flushing, remove any contact lenses and continue flushing for at least 15 minutes. Keep eye wide open while rinsing.
- Skin Contact** Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes.
- Inhalation** Remove to fresh air. Move to fresh air in case of accidental inhalation of vapors or decomposition products. If symptoms persist, call a physician.

Ingestion Do NOT induce vomiting. Drink plenty of water. Rinse mouth. Clean mouth with water and drink afterwards plenty of water. Never give anything by mouth to an unconscious person. Consult a physician if necessary.

Self-protection of the first aider Use personal protective equipment as required.

Most important symptoms and effects, both acute and delayed

Symptoms No information available.

Indication of any immediate medical attention and special treatment needed

Note to physicians May cause sensitization of susceptible persons. Treat symptomatically.

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Specific hazards arising from the chemical

In the event of fire and/or explosion do not breathe fumes. May cause sensitization by inhalation and skin contact. Thermal decomposition can lead to release of irritating and toxic gases and vapors.

Explosion data

Sensitivity to Mechanical Impact None.

Sensitivity to Static Discharge None.

Protective equipment and precautions for firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal precautions Evacuate personnel to safe areas. Ensure adequate ventilation, especially in confined areas. Use personal protective equipment as required. Keep people away from and upwind of spill/leak.

Environmental precautions

Environmental precautions Prevent further leakage or spillage if safe to do so. Prevent product from entering drains. Do not flush into surface water or sanitary sewer system. See Section 12 for additional ecological information.

Methods and material for containment and cleaning up

Methods for containment Prevent further leakage or spillage if safe to do so.

Methods for cleaning up Pick up and transfer to properly labeled containers. Dam up. Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust). Soak up with inert absorbent material.

7. HANDLING AND STORAGE

Precautions for safe handling

Advice on safe handling Ensure adequate ventilation, especially in confined areas. Take precautionary measures against static discharges. Use with local exhaust ventilation. Use personal protective equipment as required. Do not breathe dust/fume/gas/mist/vapors/spray.

Conditions for safe storage, including any incompatibilities

Storage Conditions Keep tightly closed in a dry and cool place. Keep in properly labeled containers. Keep containers tightly closed in a cool, well-ventilated place.

Incompatible materials None known.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Exposure Guidelines This product, as supplied, does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies

Other Information Vacated limits revoked by the Court of Appeals decision in AFL-CIO v. OSHA, 965 F.2d 962 (11th Cir., 1992).

Appropriate engineering controls

Engineering Controls Ensure adequate ventilation, especially in confined areas.

Individual protection measures, such as personal protective equipment

Eye/face protection Tight sealing safety goggles. Face protection shield.

Skin and body protection Wear protective gloves and protective clothing.

Respiratory protection If exposure limits are exceeded or irritation is experienced, NIOSH/MSHA approved respiratory protection should be worn. Positive-pressure supplied air respirators may be required for high airborne contaminant concentrations. Respiratory protection must be provided in accordance with current local regulations.

General Hygiene Considerations When using do not eat, drink or smoke. Regular cleaning of equipment, work area and clothing is recommended.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Physical state	Liquid	Odor	Odorless
Appearance	Liquid	Odor threshold	No information available
Color	Light blue		

<u>Property</u>	<u>Values</u>	<u>Remarks • Method</u>
pH	9.5	
Melting point/freezing point	No information available	
Boiling point / boiling range	100 °C / 212 °F	
Flash point	44 °C / 111 °F	
Evaporation rate	> 1	
Flammability (solid, gas)	No information available	
Flammability Limit in Air		
Upper flammability limit:	No information available	
Lower flammability limit:	No information available	
Vapor pressure	<17 mm Hg	
Vapor density	<1	
Specific Gravity	1.0951	
Water solubility	Soluble in water	
Solubility in other solvents	No information available	
Partition coefficient	No information available	
Autoignition temperature	No information available	

Decomposition temperature No information available
 Oxidizing properties No information available

Other Information

Density 9.12 pounds/gallon

10. STABILITY AND REACTIVITY

Reactivity

No data available

Chemical stability

Stable.

Possibility of Hazardous Reactions

None under normal processing.

Hazardous polymerization

Will not occur.

Conditions to avoid

Keep from freezing.

Incompatible materials

None known.

Hazardous Decomposition Products

None known.

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Product Information

Inhalation May cause irritation of respiratory tract.

Eye contact May cause irritation.

Skin Contact May cause irritation.

Ingestion May cause irritation.

Chemical Name	Oral LD50	Dermal LD50	Inhalation LC50
2,3:4,6-Bis-O-(1-methylethylidene)- alpha-L-xylo-2-hexulofuranosonic acid, sodium salt (Dikegulac sodium) 52508-35-7	= 18 g/kg (Rat)	> 1 g/kg (Rat) > 1 g/kg (Rabbit)	-

Information on toxicological effects

Symptoms No information available.

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Sensitization No information available.

Germ cell mutagenicity No information available.

Carcinogenicity No information available.

Reproductive toxicity No information available.

STOT - single exposure	No information available.
STOT - repeated exposure	No information available.
Chronic toxicity	Repeated contact may cause allergic reactions in very susceptible persons. Avoid repeated exposure.
Aspiration hazard	No information available.

Numerical measures of toxicity - Product Information

Oral LD50	> 5000 mg/kg body weight
Dermal LD50	> 1000 mg/kg body weight
Inhalation LC50	25.24 mg/L Rat-male

12. ECOLOGICAL INFORMATION

Ecotoxicity

Harmful to aquatic life

22% of the mixture consists of component(s) of unknown hazards to the aquatic environment

Persistence and degradability

No information available.

Bioaccumulation

No information available.

Other adverse effects

No information available

13. DISPOSAL CONSIDERATIONS

Waste treatment methods

Disposal of wastes Disposal should be in accordance with applicable regional, national and local laws and regulations.

Contaminated packaging Do not reuse container, unless specified by the manufacturer.

See Section 2: Hazards not otherwise classified (HNOC)

14. TRANSPORT INFORMATION

DOT

Description

The following guidelines apply for domestic ground transport. If shipping by air or ocean, please contact our Transportation Dept.

Inhibitors, Modifiers, or Regulators, Plant Growth - NMFC #101685

In our current available sizes, this product does not qualify as a Hazardous Material.

15. REGULATORY INFORMATION

U.S. EPA Label Information

EPA Pesticide Registration Number 2217-776

Federal Insecticide, Fungicide, Rodenticide Act Regulations

This chemical is a pesticide product registered by the Environmental Protection Agency and is subject to certain labeling requirements under federal pesticide law. These requirements differ from the classification criteria and hazard information required for safety data sheets, and for workplace labels of non-pesticide chemicals. Following is the hazard information as required on the pesticide label:

EPA Pesticide Label

Caution. Keep out of the reach of children. Causes moderate eye irritation. Avoid contact with eyes or clothing.

International Inventories

TSCA	Not Listed
DSL/NDSL	Not Listed
EINECS/ELINCS	Not Listed
ENCS	Not Listed
IECSC	Not Listed
KECL	Not Listed
PICCS	Not Listed
AICS	Not Listed

Legend:

- TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
- DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List
- EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances
- ENCS - Japan Existing and New Chemical Substances
- IECSC - China Inventory of Existing Chemical Substances
- KECL - Korean Existing and Evaluated Chemical Substances
- PICCS - Philippines Inventory of Chemicals and Chemical Substances
- AICS - Australian Inventory of Chemical Substances

Chemical Name	TSCA	DSL	NDSL	EINECS	ELINCS	ENCS	IECSC	KECL	PICCS	AICS
2,3:4,6-Bis-O-(1-methylethylidene)-alpha-L-xyllo-2-hexulofuranosonic acid, sodium salt (Dikegulac sodium)				X						X
Trade Secret	X	X		X		X	X	X	X	X

US Federal Regulations

SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372

SARA 311/312 Hazard Categories

Acute health hazard	Yes
Chronic Health Hazard	No
Fire hazard	No
Sudden release of pressure hazard	No
Reactive Hazard	No

CWA (Clean Water Act)

This product contains the following substances which are regulated pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42)

CERCLA

This material, as supplied, contains one or more substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302)

US State Regulations

U.S. State Right-to-Know Regulations

International Regulations

Mexico - Grade

Moderate risk, Grade 2

16. OTHER INFORMATION

<u>NFPA</u>	Health hazards 2	Flammability 1	Instability 0	Physical and Chemical Properties -
<u>HMIS</u>	Health hazards 2	Flammability 1	Physical hazards 0	Personal protection X

Disclaimer

The information provided in this Material Safety Data Sheet is correct to the best of PBI Gordon Corporation's knowledge, information and belief at the date of this publication. The information given is designed only as guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any other process, unless specified in the text. PBI GORDON CORPORATION MAKES NO WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OR COURSE OF PERFORMANCE OR USAGE OF TRADE. Given the variety of factors that can affect the use and application of this product, some of which are uniquely within the user's knowledge and control, it is essential that the user evaluate the product to determine whether it is fit for a particular purpose and suitable for user's method of use or application. Each user is also responsible for evaluating the conditions of use and designing the appropriate protective mechanisms to prevent employee exposures, property damage, or release to the environment. PBI Gordon Corporation assumes no responsibility for injury to the recipient or third persons, or for any damage to any property resulting from misuse of the product.

End of Safety Data Sheet

SAFETY DATA SHEET



WILBUR-ELLIS®

1. Identification

Product identifier PERFECTION 15.5-0-0 CALCIUM NITRATE
Other means of identification None.
Recommended use Ag Product / Pro Product - Plant Protection
Recommended restrictions None known.

Manufacturer/Importer/Supplier/Distributor information

Manufacturer

Company name Wilbur Ellis Company
Address Wilbur Ellis Company - Agribusiness Division
8131 W. Grandbridge Blvd, Suite 200
Kennewick, WA 99336
United States
Telephone Branded Products Information (800) 500-1698
E-mail SDS@WilburEllis.com
Emergency phone number Chemtrec - Domestic (800) 424-9300
Chemtrec - International +1 703-741-5970

2. Hazard(s) identification

Physical hazards Not classified.
Health hazards Acute toxicity, oral Category 4
Serious eye damage/eye irritation Category 1
OSHA defined hazards Not classified.

Label elements



Signal word Danger
Hazard statement Harmful if swallowed. Causes serious eye damage.
Precautionary statement

Prevention Wash thoroughly after handling. Do not eat, drink or smoke when using this product. Wear eye/face protection.

Response IF SWALLOWED: Call a poison center or doctor or doctor if you feel unwell. If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor. Rinse mouth.

Storage Store away from incompatible materials.

Disposal Dispose of contents and container in accordance with government regulations.

Hazard(s) not otherwise classified (HNOC) None known.

Supplemental information None.

3. Composition/information on ingredients

Mixtures

Chemical name	Common name and synonyms	CAS number	%
Nitric acid, ammonium calcium salt		15245-12-2	100

4. First-aid measures

Inhalation Move to fresh air. Call a physician if symptoms develop or persist.

Skin contact Wash off with soap and water. Get medical attention if irritation develops and persists.

Eye contact	Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention immediately.
Ingestion	Rinse mouth. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs. Get medical attention if you feel unwell.
Most important symptoms/effects, acute and delayed	Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Permanent eye damage including blindness could result.
Indication of immediate medical attention and special treatment needed	Provide general supportive measures and treat symptomatically. Keep victim warm. Keep victim under observation. Symptoms may be delayed.
General information	Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Show this safety data sheet to the doctor in attendance.

5. Fire-fighting measures

Suitable extinguishing media	Water fog. Foam. Dry chemical powder. Carbon dioxide (CO2).
Unsuitable extinguishing media	Do not use water jet as an extinguisher, as this will spread the fire.
Specific hazards arising from the chemical	During fire, gases hazardous to health may be formed.
Special protective equipment and precautions for firefighters	Self-contained breathing apparatus and full protective clothing must be worn in case of fire.
Fire fighting equipment/instructions	Use water spray to cool unopened containers.
Specific methods	Use standard firefighting procedures and consider the hazards of other involved materials.
General fire hazards	No unusual fire or explosion hazards noted.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures	Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Keep out of low areas. Wear appropriate protective equipment and clothing during clean-up. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ensure adequate ventilation. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS.
Methods and materials for containment and cleaning up	Stop the flow of material, if this is without risk. Prevent entry into waterways, sewer, basements or confined areas. Following product recovery, flush area with water. For waste disposal, see section 13 of the SDS.
Environmental precautions	Avoid discharge into drains, water courses or onto the ground.

7. Handling and storage

Precautions for safe handling	Do not get this material in contact with eyes. Do not taste or swallow. When using, do not eat, drink or smoke. Provide adequate ventilation. Wear appropriate personal protective equipment. Wash hands thoroughly after handling. Observe good industrial hygiene practices.
Conditions for safe storage, including any incompatibilities	Store in original tightly closed container. Store away from incompatible materials (see Section 10 of the SDS).

8. Exposure controls/personal protection

Occupational exposure limits	No exposure limits noted for ingredient(s).
Biological limit values	No biological exposure limits noted for the ingredient(s).
Appropriate engineering controls	Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. Provide eyewash station.
Individual protection measures, such as personal protective equipment	
Eye/face protection	Wear safety glasses with side shields (or goggles) and a face shield.
Skin protection	
Hand protection	Wear appropriate chemical resistant gloves.
Other	Wear suitable protective clothing.
Respiratory protection	In case of insufficient ventilation, wear suitable respiratory equipment.
Thermal hazards	Wear appropriate thermal protective clothing, when necessary.

General hygiene considerations

Keep away from food and drink. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

9. Physical and chemical properties

Appearance

Physical state	Solid.
Form	Solid.
Color	Not available.
Odor	Not available.
Odor threshold	Not available.
pH	Not available.
Melting point/freezing point	752 °F (400 °C)
Initial boiling point and boiling range	Not available.
Flash point	Not available.
Evaporation rate	Not available.
Flammability (solid, gas)	Not available.
Upper/lower flammability or explosive limits	
Flammability limit - lower (%)	Not available.
Flammability limit - upper (%)	Not available.
Explosive limit - lower (%)	Not available.
Explosive limit - upper (%)	Not available.
Vapor pressure	Not available.
Vapor density	Not available.
Relative density	Not available.
Solubility(ies)	
Solubility (water)	Soluble
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	Not available.
Decomposition temperature	Not available.
Viscosity	Not available.
Other information	
pH in aqueous solution	5 - 7 @ 110 g/l

10. Stability and reactivity

Reactivity	The product is stable and non-reactive under normal conditions of use, storage and transport.
Chemical stability	Material is stable under normal conditions.
Possibility of hazardous reactions	No dangerous reaction known under conditions of normal use.
Conditions to avoid	Contact with incompatible materials.
Incompatible materials	Strong oxidizing agents.
Hazardous decomposition products	Irritating and/or toxic fumes and gases may be emitted upon the product's decomposition.

11. Toxicological information

Information on likely routes of exposure

Inhalation	No adverse effects due to inhalation are expected.
Skin contact	No adverse effects due to skin contact are expected.
Eye contact	Causes serious eye damage.

Ingestion Harmful if swallowed.

Symptoms related to the physical, chemical and toxicological characteristics Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Permanent eye damage including blindness could result.

Information on toxicological effects

Acute toxicity Harmful if swallowed.

Components	Species	Test Results
Nitric acid, ammonium calcium salt (CAS 15245-12-2)		
Acute		
<i>Dermal</i>		
LD50	Rat	> 2000 mg/kg, 24 Hours
<i>Oral</i>		
LD50	Rat	300 - 2000 mg/kg

* Estimates for product may be based on additional component data not shown.

Skin corrosion/irritation Prolonged skin contact may cause temporary irritation.

Serious eye damage/eye irritation Causes serious eye damage.

Eye

PERFECTION 15.5-0-0 CALCIUM NITRATE

Result: Severe
Species: Rabbit
Test Duration: 72 Hours
Observation Period: 21 days

Respiratory or skin sensitization

Respiratory sensitization Not available.

Skin sensitization This product is not expected to cause skin sensitization.

Germ cell mutagenicity No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.

Carcinogenicity This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not listed.

Reproductive toxicity This product is not expected to cause reproductive or developmental effects.

Specific target organ toxicity - single exposure Not classified.

Specific target organ toxicity - repeated exposure Not classified.

Aspiration hazard Not available.

12. Ecological information

Ecotoxicity The product is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

Persistence and degradability No data is available on the degradability of this product.

Bioaccumulative potential No data available.

Mobility in soil No data available.

Other adverse effects No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

13. Disposal considerations

Disposal instructions Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Dispose of contents and container in accordance with government regulations.

Local disposal regulations Dispose in accordance with all applicable regulations.

Hazardous waste code The waste code should be assigned in discussion between the user, the producer and the waste disposal company.

Waste from residues / unused products Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).

Contaminated packaging Empty containers should be taken to an approved waste handling site for recycling or disposal. Since emptied containers may retain product residue, follow label warnings even after container is emptied.

14. Transport information

DOT

Not regulated as dangerous goods.

IATA

Not regulated as dangerous goods.

IMDG

Not regulated as dangerous goods.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code Not applicable.

15. Regulatory information

US federal regulations This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.
All components are on the U.S. EPA TSCA Inventory List.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not regulated.

CERCLA Hazardous Substance List (40 CFR 302.4)

Not listed.

SARA 304 Emergency release notification

Not regulated.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not listed.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories Immediate Hazard - Yes
Delayed Hazard - No
Fire Hazard - No
Pressure Hazard - No
Reactivity Hazard - No

SARA 302 Extremely hazardous substance

Not listed.

SARA 311/312 Hazardous chemical No

SARA 313 (TRI reporting)

Not regulated.

Other federal regulations

Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List

Not regulated.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

Not regulated.

Safe Drinking Water Act (SDWA) Not regulated.

US state regulations

US. California Controlled Substances. CA Department of Justice (California Health and Safety Code Section 11100)

Not listed.

US. Massachusetts RTK - Substance List

Not regulated.

US. New Jersey Worker and Community Right-to-Know Act

Not listed.

US. Pennsylvania Worker and Community Right-to-Know Law

Not listed.

US. Rhode Island RTK

Not regulated.

US. California Proposition 65

California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65): This material is not known to contain any chemicals currently listed as carcinogens or reproductive toxins.

International Inventories

Country(s) or region	Inventory name	On inventory (yes/no)*
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)

A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

16. Other information, including date of preparation or last revision

Issue date	01-23-2015
Version #	01
Disclaimer	This information was developed from information on the constituent materials. No warranty is expressed or implied regarding the completeness or continuing accuracy of the information contained herein, and Wilbur-Ellis disclaims all liability for reliance thereon. The user should satisfy himself that he has all current data relevant to his particular use.

Safety Data Sheet Dolomite

Section 1. Identification

GHS product identifier: Dolomite
Other means of identification: Crushed Stone, Calcium Magnesium Carbonate, Aggregate
Relevant identified uses of the substance or mixture and uses advised against: Dolomite may be used in the manufacture of bricks, mortar, cement, concrete, plasters, paving materials, and other construction materials. Dolomite aggregate may be distributed in bags, totes, and bulk shipments. No known recommended restrictions.

Supplier's details: 300 E. John Carpenter Freeway, Suite 1645
Irving, TX 75062
(972) 653-5500

Emergency telephone number (24 hours): CHEMTREC: (800) 424-9300

Section 2. Hazards Identification

GHS Classification: CARCINOGENICITY – Category 1A
SPECIFIC TARGET ORGAN TOXICITY – Category 2
REPEATED EXPOSURE
SKIN CORROSION/IRRITATION – Category 2
EYE DAMAGE/IRRITATION – Category 2A

GHS label elements

Hazard pictograms:



Signal word: Danger
Hazard statements: May cause cancer
May cause damage to organs (lung) through prolonged or repeated exposure
Causes skin irritation
Causes serious eye irritation

Precautionary statements:

Prevention: Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Wash any exposed body parts. Wear protective gloves/protective clothing/eye protection/face protection

Response: If exposed or concerned: Get medical advice/attention. If on skin: Wash with plenty of water. Take off contaminated clothing and wash it before reuse. If in eyes: Rinse continuously with water for several minutes. Remove contact lenses, if present and easy to do.

Storage: Restrict or control access to stockpile areas (store locked up). Engulfment hazard: To prevent burial or suffocation, do not enter a confined space, such as a silo, bulk truck or other storage container or vessel that stores or contains aggregates without an effective procedure for assuring safety.

Disposal: Dispose of contents/container in accordance with local/regional/national/international regulations.

Hazards not otherwise classified (HNOC): None known

Supplemental Information:

Respirable Crystalline Silica (RCS) may cause cancer. Dolomite is a naturally occurring mineral complex that contains varying quantities of quartz (crystalline silica). In its natural bulk state, dolomite is not a known health hazard. Dolomite may be subjected to various natural or mechanical forces that produce small particles (dust) which may contain respirable crystalline silica (particles less than 10 micrometers in aerodynamic diameter). Repeated inhalation of respirable crystalline silica (quartz) may cause lung cancer according to IARC and NTP; ACGIH states that it is a suspected cause of cancer. Other forms of RCS (e.g., tridymite and cristobalite) may also be present or formed under certain industrial processes.

Section 3. Composition/information on ingredients

CAS number/other identifiers

Substance/mixture: Dolomite

Ingredient name	%	CAS number
Dolomite	50 - 90	16389-88-1
Magnesium Carbonate	0 - 50	546-93-0
Calcium Oxide	> 1	1305-78-8
Crystalline Silica (Quartz)	> 1	14808-60-7

Any concentration shown as a range is to protect confidentiality or is due to process variation. There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section. These materials are mined from the earth. Trace amounts of naturally occurring elements might be detected during chemical analysis of these materials.

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures

Description of necessary first aid measures

Eye Contact:	Dust: Immediately flush with plenty of water for at least 15 minutes. Hold eyelids apart. Remove contacts if present and easy to do. Occasionally lift the eyelid(s) to ensure thorough rinsing. Beyond flushing, do not attempt to remove material from the eye(s). Get medical attention if irritation develops or persists.
Inhalation:	Dust: Move to fresh air. Call a physician if symptoms develop or persist.
Skin Contact:	Dust: Wash off with soap and water. Get medical attention if irritation develops and persists.
Ingestion:	Dust: Rinse mouth and drink plenty of water. Never give anything by mouth to an unconscious person. Get medical attention.

Most important symptoms/effects, acute and delayed

Inhaling dust may cause discomfort in the chest, shortness of breath, and coughing. Prolonged inhalation may cause chronic health effects. This product contains crystalline silica. Prolonged or repeated inhalation of respirable crystalline silica liberated from this product can cause silicosis, and may cause cancer.

Indication of immediate medical attention and special treatment needed, if necessary

Notes to physician:	Provide general supportive measures and treat symptomatically. Keep victim under observation. Symptoms may be delayed.
Specific treatments:	Not Applicable
Protection of first-aiders:	Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.
General information:	Pre-existing medical conditions that may be aggravated by exposure include disorders of the eye, skin and lung (including asthma and other breathing disorders). If addicted to tobacco, smoking will impair the ability of the lungs to clear themselves of dust.

See toxicological information (Section 11)

Section 5. Fire-fighting measures

Extinguishing media

Suitable extinguishing media:	Not flammable. Use fire-extinguishing media appropriate for surrounding materials.
Unsuitable extinguishing media:	None known.
Specific hazards arising from the chemical:	No unusual fire or explosion hazards noted. Not a combustible dust.

Hazardous thermal decomposition
 Products: None known
 Special protective equipment for fire-fighters: Use protective equipment appropriate for surrounding materials. No specific precautions.
 General fire hazards: Contact with powerful oxidizing agents may cause fire and/or explosions (see section 10 of SDS). No unusual fire or explosion hazards.

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

Wear appropriate protective equipment and clothing during clean-up of materials that contain or may liberate dust.

Methods and materials for containment, cleaning up and Environmental precautions

Spilled material, where dust is generated, may overexpose cleanup personnel to respirable crystalline silica-containing dust. Do not dry sweep or use compressed air for clean-up. Wetting of spilled material and/or use of respiratory protective equipment may be necessary. Avoid discharge of fine particulate matter into drains or water courses.

Section 7. Handling and storage

Precautions for safe handling

Protective measures: Do not handle until all safety precautions have been read and understood. Keep formation of airborne dusts to a minimum. Provide appropriate exhaust ventilation at places where dust is formed. Do not breathe dust. Avoid prolonged exposure. Provide adequate ventilation. Wear appropriate personal protective equipment.
 Advice on general occupational hygiene: Observe good industrial hygiene practices. Promptly remove dusty clothing and launder before reuse.
 Conditions for safe storage, including any incompatibilities: Avoid dust formation or accumulation.

Section 8. Exposure controls/personal protection

Control parameters

- Occupational exposure limits:
 1 – Value equivalent to OSHA formulas (29 CFR 1910.1000; 29 CFR 1917; 29 CFR 1918)
 2 – Value also applies to MSHA metal/Non-Metal (1973 TLVs at 30 CFR 56/57.5001)
 3 – OSHA enforces 0.250 mg/m³ in construction and shipyards (CPL-03-00-007)
 4 – Value also applies to OSHA construction (29 CFR 1926.55 Appendix A) and shipyards (29 CFR 1915.1000 Table Z)
 5 – MSHA limit = 10 mg/m³

Ingredient name	Exposure limits
Particulates not otherwise classified (CAS SEQ250)	ACGIH TLV (United States, 3/2012) TWA: 3 mg/m ³ . Form: Respirable particles (2) TWA: 10 mg/m ³ . Form: Inhalable particles (2) OSHA PEL (United States, 6/2010) PEL: 5 mg/m ³ . Form: Respirable fraction PEL: 15 mg/m ³ . Form: Total dust (4) TWA: 5 mg/m ³ . Form: Respirable fraction (1) TWA: 15 mg/m ³ . Form: Total dust (1, 4, 5)
Calcium Oxide (CAS 1305-78-8)	ACGIH TLV (United States, 3/2012) TWA: 2 mg/m ³ . OSHA PEL (United States, 6/2010) TWA: 5 mg/m ³ . NIOSH REL (United States, 6/2009)

	TWA: 2 mg/m ³ .
Crystalline Silica (Quartz) (CAS 14808-60-7)	OSHA PEL (United States, 6/2010) TWA: 0.3 mg/m ³ . Form: Total dust (1,2) TWA: 0.1 mg/m ³ . Form: Respirable (1,2,3)
Crystalline Silica (all forms; CAS mixture)	ACGIH TLV (United States, 3/2012) TWA: 0.025 mg/m ³ . Form: Respirable fraction NIOSH REL (United States, 6/2009) TWA: 0.05 mg/m ³ . Form: Respirable dust
Tridymite and Cristobalite (other forms of crystalline silica) (CAS Mixture)	OSHA PEL (United States, 6/2010) TWA: 0.15 mg/m ³ . Form: Total dust (1) TWA: 0.05 mg/m ³ . Form: Respirable (1,2)

Appropriate engineering controls: Good general ventilation (typically 10 air changes per hour indoors) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level.

Exposure guidelines: OSHA PELs, MSHA PELs, and ACGIH TLVs are 8-hr TWA values. NIOSH RELs are for TWA exposures up to 10-hr/day and 40-hr/wk. Occupational exposure to nuisance dust (total and respirable) and respirable crystalline silica should be monitored and controlled. Terms including "Particulates Not Otherwise Classified," "Particulates Not Otherwise Regulated," "Particulates Not Otherwise Specified," and "Inert or Nuisance Due" are often used interchangeably; however, the user should review each agency's terminology for differences in meanings.

Biological limit values: No biological exposure limits noted for the ingredient(s)

Individual protection measures

Hygiene measures: Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

Eye/face protection: Wear safety glasses with side shields (or goggles).

Hand protection: Use personal protective equipment as required.

Body protection: Use personal protective equipment as required.

Other skin protection: Use personal protective equipment as required.

Respiratory protection: When handling or performing work that produces dust or respirable crystalline silica in excess of applicable exposure limits, wear a NIOSH-approved respirator that is properly fitted and is in good condition. Respirators must be used in accordance with all applicable workplace regulations.

Thermal hazards: Not anticipated. Wear appropriate thermal protective clothing if necessary.

Section 9. Physical and chemical properties

Appearance

Physical State:	Solid, particles of granular and angular mixture	Lower and Upper explosive flammable limits	Not applicable
Color:	Various colors, gray	Vapor pressure:	Not applicable
Odor:	Not applicable	Vapor density:	Not applicable
Odor threshold:	Not applicable	Relative density:	Not available
pH:	8.5	Solubility:	Not available
Melting point:	Not applicable	Solubility in water:	Insoluble
Boiling point:	Not applicable	Partition coefficient: n-octanol/water:	Not applicable
Flash point:	Non-combustible	Auto-ignition temperature:	Not applicable
Burning time:	Not applicable	Decomposition temperature:	Not available
Burning rate:	Not applicable	SADT:	Not available
Evaporation Rate:	Not applicable	Viscosity:	Not applicable

Flammability (solid, gas): Not applicable

Section 10. Stability and reactivity

Reactivity: The product is stable and non-reactive under normal conditions of use, storage and transport.
Chemical Stability: Material is stable under normal conditions
Possibility of hazardous reactions: No dangerous reaction known under conditions of normal use.
Conditions to avoid: Avoid contact with strong oxidizing agents. Do not store or mix with fluorine, aluminum, magnesium, ammonium salts, hydrogen and acids.
Incompatible materials: Strong acids. Crystalline silica may react violently with strong oxidizing agents, causing fire and explosions.
Hazardous decomposition products: Silica dissolves in hydrofluoric acid producing a corrosive gas-silicon tetrafluoride.

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity: Not expected to be acutely toxic.
Irritation/Corrosion: **Skin:** Dust: May cause irritation through mechanical abrasion. This product is not expected to be a skin hazard.
Eyes: Direct contact with eyes may cause temporary irritation through mechanical abrasion.
Inhalation: Repeated inhalation of respirable crystalline silica (quartz) may cause silicosis, a fibrosis (scarring) of the lungs. Silicosis is irreversible and may be fatal. Silicosis increases the risk of contracting pulmonary tuberculosis. Some studies suggest that repeated inhalation of respirable crystalline silica may cause other adverse health effects including lung and kidney cancer.
Ingestion: Not likely due to product form. However accidental ingestion may cause discomfort.
Respiratory sensitization: No respiratory sensitizing effects known.
Skin sensitization: Not known to be a dermal irritant or sensitizer.
Mutagenicity: No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.
Aspiration Hazard: Not expected to be an aspiration hazard.
Reproductive toxicity: Not expected to be a reproductive hazard.
Symptoms related to physical, chemical and toxicological characteristics: Dust: discomfort in the chest. Shortness of breath. Coughing.
Carcinogenicity: Respirable crystalline silica has been classified by IARC and NTP as a known human carcinogen, and classified by ACGIH as a suspected human carcinogen.

Product/ingredient name	OSHA	IARC	ACGIH	NTP
Crystalline Silica (Quartz) CAS 14808-60-7)	Not listed	1 Carcinogenic to humans	A2	Known to be human Carcinogen
Respirable Tridymite and Cristoballite (Other forms of Crystalline) (CAS Mixture)	Not listed	1 Carcinogenic to humans	-	-

Specific target organ toxicity (acute exposure)

Name	Category	Route of Exposure	Target Organs
Crystalline Silica (Quartz) CAS 14808-60-7)	-	Inhalation	Not reported to have effects
Respirable Tridymite and Cristoballite (Other forms of Crystalline) (CAS Mixture)	-	Inhalation	Not reported to have effects

Specific target organ toxicity (chronic exposure)

Name	Category	Route of Exposure	Target Organs
Crystalline Silica (Quartz) CAS 14808-60-7)		Inhalation	May cause damage to organs (lung through prolonged or repeated exposure.
Respirable Tridymite and Cristobalite (Other forms of Crystalline) (CAS Mixture)		Inhalation	May cause damage to organs (lung through prolonged or repeated exposure.

Potential chronic health effects: General: Prolonged inhalation of respirable crystalline silica may be harmful. May cause damage to organs (lungs) through prolonged or repeated exposure. There are reports in the literature suggesting that excessive crystalline silica exposure may be associated with autoimmune disorders and other adverse health effects involving the kidney. In particular, the incidence of scleroderma (thickening of the skin caused by swelling and the thickening of fibrous tissue) appears to be higher in silicotic individuals. To date, the evidence does not conclusively determine a causal relationship between silica exposure and these adverse health effects.

Section 12. Ecological Information

Ecotoxicity

May be toxic to aquatic life due to high pH in water. Discharging sand and gravel dust and fines into waters may increase total suspended particulate (TSP) levels that can be harmful to certain aquatic organisms.

Persistence and degradability:	Not applicable.
Bioaccumulative potential:	Not applicable.
Mobility in soil:	Not applicable.
Other adverse effects:	No other adverse environmental effects (e.g., ozone depletion, photochemical ozone creation potential, global warming potential) are expected from this component.

Section 13. Disposal considerations

Disposal methods:	Do not allow fine particulate matter to drain into sewers/water supplies. Do not contaminate ponds, waterways or ditches with fine particulates. Dispose of contents in accordance with local/regional/national/international regulations.
Hazardous waste code:	Not regulated.
Waste from residues/unused products:	Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner.
Contaminated packaging:	Since emptied containers may retain product residue, follow label warnings even after container is emptied. Empty packaging materials should be recycled or disposed of in accordance with applicable regulations and practices.

Section 14. Transportation information

	DOT Classification	IMDG	IATA
UN number	Not regulated.	Not regulated.	Not regulated.
UN proper shipping name	-	-	-
Transport hazard class(es)	-	-	-
Packing group	-	-	-
Environmental hazards	-	-	-
Additional information	-	-	-

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Section 15. Regulatory Information

U.S. Federal regulations:
 OSHA Hazard Communication Standard, 29 CFR 1910.1200 This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200
 TSCA Section 12(b) Export Notification (40 CFR 707, Subpart. D): Not regulated
 OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050): Not listed
 CERCLA Hazardous Substance List (40 CFR 302.4): Not listed
 Clean Air Act Section 112 (b): Hazardous Air Pollutants (HAPs): Not regulated
 Clean Air Act Section 112 (r) Accidental Release Prevention (40 CFR 68.130): Not regulated
 Safe Drinking Water Act (SDWA): Not regulated

SARA 311/312

Classification: Delayed (chronic) health hazard

Composition/information on ingredients

Name	%	Fire Hazard	Sudden release of pressure	Reactive	Immediate (acute) health hazard	Delayed (chronic) health hazard
Crystalline Silica (Quartz) CAS 14808-60-7	>1	No	No	No	No	Yes
Calcium Oxide CAS 1305-78-8	>1	No	No	No	Yes	No

SARA 313 (TRI)

	Product name	CAS number	%
Form R-Report requirements	Crystalline Silica (Quartz)	14808-60-7	Not regulated

State regulations

Massachusetts RTK: Product listed
 New Jersey RTK: Product listed
 Pennsylvania RTK: Product listed
 Rhode Island RTK: Not regulated.

California Prop. 65

WARNING: This product contains crystalline silica and chemicals (trace metals) known to the State of California to cause cancer.

Ingredient name	Cancer	Reproductive	No significant risk level	Maximum acceptable dosage level
Crystalline Silica (Quartz) CAS 14808-60-7	Yes	No	No	No

International regulations

Ingredient name	CAS #	TSCA	Canada	WHMIS	EEC

Crystalline Silica (Quartz)	14808-60-7	Yes	DSL	D2A	EINECS
Magnesium Carbonate	546-93-0	Yes	DSL	-	EINECS
Dolomite	16389-88-1	Yes	NDSL	-	EINECS
Calcium Oxide	1305-78-8	Yes	NDSL	-	EINECS

WHMIS Classification:

D2A "Materials Causing Other Toxic Effects"



Section 16. Other Information

Date of issue: 06/01/2015

Version: 06/01/2015

Revised Section(s): N/Ap

Notice to reader

While the information provided in this safety data sheet is believed to provide a useful summary of the hazards of dolomite as it is commonly used, the sheet cannot anticipate and provide all of the information that might be needed in every situation. Inexperienced product users should obtain proper training before using this product. In particular, the data furnished in this sheet do not address hazards that may be posed by other materials mixed with dolomite to produce dolomite products. Users should review other relevant material safety data sheets before working with this dolomite or working on dolomite products.

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Abbreviations

ACGIH — American Conference of Governmental Industrial Hygienists
CAS — Chemical Abstract Service
CERCLA — Comprehensive Emergency Response and Comprehensive Liability Act
CFR — Code of Federal Regulations
DOT — Department of Transportation
GHS — Globally Harmonized System
HEPA — High Efficiency Particulate Air
IATA — International Air Transport Association
IARC — International Agency for Research on Cancer
IMDG — International Maritime Dangerous Goods
NIOSH — National Institute of Occupational Safety and Health
NOEC — No Observed Effect Concentration
NTP — National Toxicology Program
OSHA — Occupational Safety and Health Administration
PEL — Permissible Exposure Limit
REL — Recommended Exposure Limit
RQ — Reportable Quantity
SARA — Superfund Amendments and Reauthorization Act
SDS — Safety Data Sheet
TLV — Threshold Limit Value
TPQ — Threshold Planning Quantity
TSCA — Toxic Substances Control Act
TWA — Time-Weighted Average
UN — United Nations

MATERIAL SAFETY DATA SHEET

Essential® Plus 1-0-1

Section 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Company : Growth Products, Ltd.
80 Lafayette Avenue
White Plains, NY 10603
Phone Number: 800-648-7626
Chemical Name / Common Name: Organic Liquid Fertilizer Solution

Section 2 - HAZARDOUS INGREDIENTS

HAZARDOUS INGREDIENTS: None. This product does not require labeling.

Section 3 - PHYSICAL DATA

Physical State:	Thick Solution	Evaporation Rate:	Same as Water
Color:	Brown	Boiling Point:	About 210 Degrees F
Odor:	Sweet/Salty Organic Smell	Freezing Point:	18 Degrees F
Weight Per Gallon:	8.99# @ 21 Degrees C	Viscosity:	54 cps @ 21 Degrees C
Storage Life at 70F:	2 years	Flash Point/Method:	Noncombustible
pH - 21C:	4.5	Vapor Pressure:	N/A
Solubility:	Completely Miscible		

Section 4 - FIRE AND EXPLOSION HAZARD

Explosion Properties:	Noncombustible
Flammable Limit:	LEL: N/A UEL: N/A
Extinguishing Media:	Does Not Burn
Special Fire Fighting Procedures:	None
Unusual Fire and Explosion Hazards:	None

Section 5 - HEALTH HAZARD INFORMATION

EFFECTS OF OVEREXPOSURE ACUTE (SHORT TERM EXPOSURE):

Liquid contact may cause slight eye irritation and repeated skin exposure may cause some skin irritation

CHRONIC (LONG TERM EXPOSURE):

None known

Section 6 - EMERGENCY AND FIRST AID PROCEDURES

INHALATION: Not expected to be harmful under normal conditions of use, however if allowed to become airborne, may cause irritation of nose, throat and lungs

EYE CONTACT: May cause irritation on prolonged or repeated contact

SKIN CONTACT: May cause irritation on prolonged or repeated contact

Section 7: TOXICITY INFORMATION

ACUTE TOXICITY (LETHAL DOSES)

DERMAL LD₅₀: N/E

ORAL LD₅₀: N/E

ACUTE TOXICITY (IRRITATION, SENSITIZATION)

EFFECTS TO EYES: No corneal or iridal effects were noted at a dose of 0.1 ml for rabbits

EFFECTS TO INGESTION: Non toxic or pathogenic

Essential® Plus 1-0-1 Con't

EFFECTS TO SKIN: Moderate irritation, reversible within 7 days

CARCINOGENICITY DATE: N/A

Section 8: REACTIVITY DATA

STABILITY: Stable

CONDITIONS TO AVOID: N/A

HAZARDOUS DECOMPOSITION PRODUCTS OF DRY MATERIAL: CO, CO₂, NH₃, Aldehydes (including Formaldehyde), particulate matter and other organic compound.

HAZARDOUS POLMERIZATION: Will not occur

Section 9: SPECIAL PROTECTION INFORMATION

PROTECTIVE GLOVES: Gloves

EYE PROTECTION: Use goggles if contact is likely.

OTHER PROTECTION: N/A

RESPIRATORY PROTECTION OR REQUIRED VENTILATION:

Not normally needed. Where air contaminants can exceed acceptable criteria use NIOSH/MSHA approved respiratory protection equipment.

Section 10 – SPILL AND LEAK PROCEDURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED:

Prevent product from entering drinking water supplies. Collect liquid or solidify with absorbent material and package for disposal according to local, state, and federal regulations.

WASTE DISPOSAL PRECEDURES:

This product is likely to have a pH less than 8.5 and would not be considered a federal hazardous waste according to EPA regulation 40CFR 261. Dispose in accordance with state and local regulation.

REPORTABLE QUANTITY UNDER CERCLA: N/A

Section 11 – STORAGE AND HANDLING INFORMATION

STORAGE TEMPERATURE:

MAX 100° F **MIN** 32° F **INDOOR** **OUTDOOR** **REFRIG.**

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE:

Not harmed by freezing. Thaw frozen fertilizer slowly and stir before using. Store in a cool place. Rotate stock in storage to use oldest first.

Section 12 – TRANSPORTATION INFORMATION

DOT UN STATUS: This material is not regulated hazardous material for transportation

OTHER PRECAUTIONS:

Read entire label before using

This information is furnished without warranty, expressed or implied, except that is accurate to the best knowledge of Growth Products, Ltd. The data on this sheet relates only to the specific material designated herein. Growth Products, Ltd. assumes no legal responsibility for use or reliance upon this data.

ABBREVIATIONS: N/E – NOT ESTABLISHED N/A – NOT APPLICABLE

Best EverGreen 18-5-0 + %5 Iron

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

SECTION 1: Identification

1.1. Identification

Product form : Mixture
Product name : Best EverGreen 18-5-0 + %5 Iron
Product code : M15005

1.2. Relevant identified uses of the substance or mixture and uses advised against

No additional information available

1.3. Details of the supplier of the safety data sheet

JR Simplot Company
P.O. Box 70013
Boise, ID 83707
T 1-208-336-2110

1.4. Emergency telephone number

Emergency number : CHEMTREC 1-800-424-9300

SECTION 2: Hazard(s) identification

2.1. Classification of the substance or mixture

GHS-US classification

Eye Irrit. 2B H320 - Causes eye irritation
STOT SE 3 H335 - May cause respiratory irritation
Full text of H-statements: see section 16

2.2. Label elements

GHS-US labelling

Hazard pictograms (GHS-US) :



GHS07

Signal word (GHS-US) : Warning
Hazard statements (GHS-US) : H320 - Causes eye irritation
H335 - May cause respiratory irritation
Precautionary statements (GHS-US) : P261 - Avoid breathing dust/fume/gas/mist/vapours/spray
P264 - Wash ... thoroughly after handling
P271 - Use only outdoors or in a well-ventilated area
P304+P340 - If inhaled: Remove person to fresh air and keep comfortable for breathing
P305+P351+P338 - If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P312 - Call a poison center/doctor/... if you feel unwell
P337+P313 - If eye irritation persists: Get medical attention
P403+P233 - Store in a well-ventilated place. Keep container tightly closed
P405 - Store locked up
P501 - Dispose of contents/container to ...in accordance with local/regional/national regulations

2.3. Other hazards

No additional information available

2.4. Unknown acute toxicity (GHS US)

Not applicable

SECTION 3: Composition/information on ingredients

3.1. Substance

Not applicable

3.2. Mixture

Best EverGreen 18-5-0 + %5 Iron

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Name	Product identifier	%	GHS-US classification
ammonium sulfate (7783-20-2)	(CAS No) 7783-20-2		Not classified
Monoammonium Phosphate	(CAS No) 7722-76-1		Eye Irrit. 2B, H320 STOT SE 3, H335
Iron Oxysulfate			Eye Irrit. 2B, H320
Sand			STOT SE 3, H335
Wax	(CAS No) 64771-72-8		Not classified

Full text of H-statements: see section 16

SECTION 4: First aid measures

4.1. Description of first aid measures

- First-aid measures general : Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label where possible).
- First-aid measures after inhalation : Allow breathing of fresh air. Allow the victim to rest.
- First-aid measures after skin contact : Remove affected clothing and wash all exposed skin area with mild soap and water, followed by warm water rinse.
- First-aid measures after eye contact : Rinse immediately with plenty of water. Obtain medical attention if pain, blinking or redness persist.
- First-aid measures after ingestion : Rinse mouth. Do NOT induce vomiting. Obtain emergency medical attention.

4.2. Most important symptoms and effects, both acute and delayed

- Symptoms/injuries : Not expected to present a significant hazard under anticipated conditions of normal use.

4.3. Indication of any immediate medical attention and special treatment needed

No additional information available

SECTION 5: Firefighting measures

5.1. Extinguishing media

- Suitable extinguishing media : Foam. Dry powder. Carbon dioxide. Water spray. Sand.
- Unsuitable extinguishing media : Do not use a heavy water stream.

5.2. Special hazards arising from the substance or mixture

- Reactivity : Stable.

5.3. Advice for firefighters

- Firefighting instructions : Use water spray or fog for cooling exposed containers. Exercise caution when fighting any chemical fire. Prevent fire-fighting water from entering environment.
- Protection during firefighting : Do not enter fire area without proper protective equipment, including respiratory protection.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

- Emergency procedures : Evacuate unnecessary personnel.

6.1.2. For emergency responders

- Protective equipment : Equip cleanup crew with proper protection.
- Emergency procedures : Ventilate area.

6.2. Environmental precautions

Prevent entry to sewers and public waters. Notify authorities if liquid enters sewers or public waters.

6.3. Methods and material for containment and cleaning up

- Methods for cleaning up : On land, sweep or shovel into suitable containers. Minimize generation of dust. Store away from other materials.

6.4. Reference to other sections

See Heading 8. Exposure controls and personal protection.

Best EverGreen 18-5-0 + %5 Iron

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling : Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Provide good ventilation in process area to prevent formation of vapour.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions : Keep only in the original container in a cool, well ventilated place away from : Keep container closed when not in use.
Incompatible products : Strong bases. Strong acids.
Incompatible materials : Sources of ignition. Direct sunlight.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

No additional information available

8.2. Exposure controls

Personal protective equipment : Avoid all unnecessary exposure.
Hand protection : Wear protective gloves.
Eye protection : Chemical goggles or safety glasses.
Respiratory protection : Wear appropriate mask.
Other information : Do not eat, drink or smoke during use.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state : Solid
Appearance : Dark gray colored granules.
Colour : Dark Gray
Odour : No data available on odour
Odour threshold : No data available
pH : No data available
Melting point : No data available
Freezing point : No data available
Boiling point : No data available
Flash point : Non-flammable
Relative evaporation rate (butylacetate=1) : No data available
Flammability (solid, gas) : No data available
Explosive limits : No data available
Explosive properties : No data available
Oxidising properties : No data available
Vapour pressure : No data available
Relative density : No data available
Relative vapour density at 20 °C : No data available
Solubility : Water: Solubility in water of component(s) of the mixture :
• Monoammonium Phosphate: 38 g/100ml • ammonium sulfate (7783-20-2): 77 g/100ml
Log Pow : No data available
Auto-ignition temperature : No data available
Decomposition temperature : No data available
Viscosity : No data available
Viscosity, kinematic : No data available
Viscosity, dynamic : No data available

Best EverGreen 18-5-0 + %5 Iron

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9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

Stable.

10.2. Chemical stability

Stable.

10.3. Possibility of hazardous reactions

Not established.

10.4. Conditions to avoid

Direct sunlight. Extremely high or low temperatures.

10.5. Incompatible materials

Oxidizing agent. Prolonged contact may cause oxidation of unprotected metals. Strong acids. Strong bases.

10.6. Hazardous decomposition products

The product may reach melting point and decompose to release NH₃, SO_x, PO_x, or CN. fume. Carbon monoxide. Carbon dioxide.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity : Not classified

Monoammonium Phosphate (7722-76-1)	
LD50 oral rat	5750 mg/kg (Rat)
LD50 dermal rat	> mg/kg
LD50 dermal rabbit	> 7940 mg/kg (Rabbit)
ATE US (oral)	5750.000 mg/kg bodyweight

ammonium sulfate (7783-20-2) (7783-20-2)	
LD50 oral rat	2840 mg/kg (Rat)
LD50 dermal rat	> 2000 mg/kg
ATE US (oral)	2840.000 mg/kg bodyweight

Skin corrosion/irritation : Not classified
Serious eye damage/irritation : Causes eye irritation.
Respiratory or skin sensitisation : Not classified
Germ cell mutagenicity : Not classified
Based on available data, the classification criteria are not met
Carcinogenicity : Not classified

Reproductive toxicity : Not classified
Based on available data, the classification criteria are not met
Specific target organ toxicity (single exposure) : May cause respiratory irritation.

Specific target organ toxicity (repeated exposure) : Not classified

Aspiration hazard : Not classified

Potential adverse human health effects and symptoms : Based on available data, the classification criteria are not met.

SECTION 12: Ecological information

12.1. Toxicity

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Monoammonium Phosphate (7722-76-1)	
LC50 fish 1	155 ppm (96 h; Pimephales promelas)

ammonium sulfate (7783-20-2) (7783-20-2)	
LC50 fish 1	126 mg/l (96 h; Poecilia reticulata)
EC50 Daphnia 1	202 mg/l (96 h; Daphnia magna)
LC50 fish 2	250 - 480 mg/l (96 h; Brachydanio rerio)
EC50 Daphnia 2	433 mg/l (50 h; Daphnia magna)
TLM fish 1	1290 ppm (96 h; Gambusia affinis)

12.2. Persistence and degradability

Best EverGreen 18-5-0 + %5 Iron	
Persistence and degradability	Not established.

Monoammonium Phosphate (7722-76-1)	
Persistence and degradability	Biodegradability in water: no data available. Not established.

Iron Oxysulfate	
Persistence and degradability	Not established.

Sand	
Persistence and degradability	Not established.

Wax (64771-72-8)	
Persistence and degradability	Not established.

ammonium sulfate (7783-20-2) (7783-20-2)	
Persistence and degradability	Biodegradability in water: no data available. Not established.

12.3. Bioaccumulative potential

Best EverGreen 18-5-0 + %5 Iron	
Bioaccumulative potential	Not established.

Monoammonium Phosphate (7722-76-1)	
Bioaccumulative potential	Not bioaccumulative. Not established.

Iron Oxysulfate	
Bioaccumulative potential	Not established.

Sand	
Bioaccumulative potential	Not established.

Wax (64771-72-8)	
Bioaccumulative potential	Not established.

ammonium sulfate (7783-20-2) (7783-20-2)	
Log Pow	-5.1
Bioaccumulative potential	Bioaccumulation: not applicable. Not established.

12.4. Mobility in soil

No additional information available

12.5. Other adverse effects

Effect on the global warming : No known ecological damage caused by this product.

Other information : Avoid release to the environment.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Waste disposal recommendations : Dispose in a safe manner in accordance with local/national regulations.

Ecology - waste materials : Avoid release to the environment.

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SECTION 14: Transport information

Department of Transportation (DOT)

In accordance with DOT
Not regulated for transport

TDG

No additional information available

Transport by sea

No additional information available

Air transport

No additional information available

SECTION 15: Regulatory information

15.1. US Federal regulations

Best EverGreen 18-5-0 + %5 Iron
Not listed on the United States TSCA (Toxic Substances Control Act) inventory

All components of this product are listed, or excluded from listing, on the United States Environmental Protection Agency Toxic Substances Control Act (TSCA) inventory except for:

Iron Oxysulfate	CAS No	%
Sand	CAS No	%

This product or mixture does not contain a toxic chemical or chemicals in excess of the applicable de minimis concentration as specified in 40 CFR §372.38(a) subject to the reporting requirements of section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372.

15.2. International regulations

CANADA

No additional information available

EU-Regulations

No additional information available

National regulations

No additional information available

15.3. US State regulations

California Proposition 65 - This product does not contain any substances known to the state of California to cause cancer, developmental and/or reproductive harm

SECTION 16: Other information

Data sources : REGULATION (EC) No 1272/2008 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 16 December 2008 on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006.

Other information : None.

Full text of H-statements:

Eye Irrit. 2B	Serious eye damage/eye irritation, Category 2B
STOT SE 3	Specific target organ toxicity — Single exposure, Category 3, Respiratory tract irritation
H320	Causes eye irritation
H335	May cause respiratory irritation.

Best EverGreen 18-5-0 + %5 Iron

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SDS US (GHS HazCom 2012)

Disclaimer: This information relates to the specific material designated and may not be valid for such material used in combination with any other materials or in any process. Such information is to the best of our knowledge and belief, accurate and reliable as of the date compiled. However, no representation, warranty or guarantee is made as to its accuracy, reliability or completeness. NO WARRANTY OF MERCHANTABILITY, FITNESS FOR ANY PARTICULAR PURPOSE, OR ANY OTHER WARRANTY, EXPRESS OR IMPLIED, IS MADE CONCERNING THE INFORMATION HEREIN PROVIDED. It is the user's responsibility to satisfy himself as to the suitability and completeness of such information for his own particular use. We do not accept liability for any loss or damage that may occur from the use of this information nor do we offer warranty against patent infringement.



MATERIAL SAFETY DATA SHEET

SECTION 1. IDENTIFICATION	Date: 10/08/10
----------------------------------	-----------------------

MANUFACTURER/FORMULATOR: Gro-Power, Inc. 15065 Telephone Avenue Chino, CA 91710-9614	PRODUCT NAME: Gro-Power Premium Green 5-3-1 (greens grade) COMMON NAME: CHEMICAL TYPE: Organic Base & Inorganics TELEPHONE NO.: (800) 473-1307
--	---

SECTION 2. INGREDIENTS

CHEMICALS NAMES & SYNONYMS	CHEMICAL FORMULAS	CAS NO.	LD50	TLV/PEL
HAZARDOUS: None Listed				
NONE NONE				

NON-HAZARDOUS: Gro-Power Premium Green 5-3-1 (Greens Grade) is a moderately acidic based fertilizer / soil conditioner with 70% humus and 15% Humic Acids. Inorganic is a small (combination) percentage of Urea Di-Ammonia Phosphate, Sulphate of Potash. Also includes Oxides of Iron, Magnesium, Manganese, Zinc, and Alkyl Napathalene Sodium Sulphonate. Contains no sewage, sludge, animal or poultry manure.

SECTION 3. PHYSICAL PROPERTIES

APPEARANCE: Blackish/Grey-Brown Granule	pH: 4.5	ODOR: None	REACTION w/WATER: None
SOLUBILITY: N/A	BOILING PT: N/A	MELTING PT: 240° F Decomposes	
SPECIFIC GRAVITY: N/A	VAPOR PRESSURE: N/A	%VOLATILES: N/A	

SECTION 4. FIRE AND EXPLOSION HAZARD DATA
--

FLASH POINT: Decomposes	FLAMMABLE LIMITS - UPPER: N/A	LOWER: N/A
AUTOIGNITION TEMPERATURE: NONE		
DOT HAZARD CLASS: NONE		
NFPA RATINGS:	HEALTH: 1	FLAMMABILITY: 0
	REACTIVITY: 0	OTHER: 0

EXTINGUISHING MEDIA: Use any means suitable for extinguishing surrounding fire, dry chemical, water, sand.
SPECIAL FIRE FIGHTING PROCEDURES: Remove ignition source. Minimize breathing of fumes.
UNUSUAL FIRE AND EXPLOSION HAZARDS: At high temperatures, may decompose and release toxic gases of ammonia and phosphates.

SECTION 5. REACTIVITY

STABILITY (NORMAL CONDITIONS): <input checked="" type="checkbox"/> STABLE <input type="checkbox"/> UNSTABLE
CONDITIONS TO AVOID: Extreme heat over 300° F.
HAZARDOUS POLYMERIZATION: <input type="checkbox"/> MAY OCCUR <input checked="" type="checkbox"/> WILL NOT OCCUR
CONDITIONS TO AVOID: N/A
INCOMPATIBILITY (MATERIALS TO AVOID): NONE listed

SECTION 6. HEALTH HAZARD DATA

ROUTES OF ENTRY: <input checked="" type="checkbox"/> INHALATION <input checked="" type="checkbox"/> SKIN <input checked="" type="checkbox"/> INGESTION <input checked="" type="checkbox"/> EYES
--

HEALTH HAZARDS: No health hazard under normal conditions. Dust from product may cause slight irritation to respiratory mucous membranes. Prolonged contact may cause slight skin irritation. May be slightly irritating to eyes.
SIGNS AND SYMPTOMS OF EXPOSURE: No effects of overdose listed in literature.
EMERGENCY FIRST AID: If large amount ingested, give 2-3 glasses of water and induce vomiting. Obtain medical attention. For eye exposure, flush eyes with water for 15 minutes to remove dust. For skin exposure, wash skin with mild soap and water.
POTENTIAL CARCINOGENICITY: Not listed by (NTP) or (LARC).

SECTION 7. PRECAUTIONS FOR SAFE HANDLING AND USE

IF MATERIAL IS RELEASED OR SPILLED: Sweep up and scoop into suitable containers for use, recycle, or disposal.
HANDLING AND STORAGE PRECAUTIONS: Store in a cool dry location. Avoid open storage or exposure to water to prevent moisture build up. Keep out of reach of children and pets.

SECTION 8. CONTROL MEASURES

VENTILATION: Natural ventilation outside.
PROTECTIVE CLOTHING AND EQUIPMENT: Dust respirator when necessary. Normal clean work clothing. Gloves when handling. Safety glasses.
WORK HYGIENIC PRACTICES: Available eyewash fountain and washing facilities. Wash hands after use. Wash work clothes after use.

FURTHER DETAILED INFORMATION AVAILABLE UPON REQUEST. THE INFORMATION ON THIS MSDS IS BELIEVED TO BE CORRECT AND IS GIVEN IN GOOD FAITH; HOWEVER, NO WARRANTY, EXPRESSED OR IMPLIED, IS INTENDED. Gro-Power, Inc.





SAFETY DATA SHEET

SECTION 1	PRODUCT AND COMPANY IDENTIFICATION
Trade Name:	K-Mag®, all grades
Chemical Name:	Potassium Magnesium Sulfate
CAS Number:	14977-37-8
Chemical Family:	Inorganic Salt
Synonyms:	Potassium Magnesium Sulfate SPM Langbeinite Sulfate of Potash Magnesia
Primary Use:	Crop nutrient
Company Information:	THE MOSAIC COMPANY 3033 Campus Drive Plymouth, MN 55441 www.mosaicco.com 800-918-8270 or 763-577-2700 8 AM to 5 PM Central Time US
Emergency Telephone:	24 Hour Emergency Telephone Number: <u>For Chemical Emergencies:</u> Spill, Leak, Fire or Accident Call CHEMTREC North America: (800) 424-9300 Others: (703) 527-3887 (collect)

SECTION 2	HAZARD IDENTIFICATION	
GHS Classification:	Not Applicable	Not Applicable
	Signal Word: not applicable Hazard Statement(s) Not applicable	
Label Elements:		
Prevention:	Not applicable	
Response:	Not applicable	Not applicable
Storage:	Not applicable	Not applicable
Disposal:	Not applicable	Not applicable

SECTION 3	COMPOSITION INFORMATION ON INGREDIENTS		
Formula:	K ₂ SO ₄ · 2MgSO ₄		
Composition:	Potassium Magnesium Sulfate (Langbeinite)	CAS 14977-37-8	94.5-99.5%
	Sodium Chloride	CAS 7647-14-5	0.5-2.0%



SECTION 4		FIRST AID MEASURES
First Aid Procedures:	Eyes:	Move victim away from exposure and into fresh air. Flush eyes with plenty of clean water for at least 15 minutes. If symptoms persist, seek medical attention.
	Skin:	Wash contaminated area thoroughly with mild soap and water. If chemical or solution soaks through clothing, remove clothing and wash contaminated skin. If irritation develops and persists after washing, seek medical attention.
	Inhaled:	If respiratory symptoms develop, move victim away from source of exposure and into fresh air. If symptoms persist, seek medical attention.
	Ingestion:	If large amounts are swallowed, seek emergency medical attention. If possible, do not leave victim unattended and observe closely for adequacy of breathing.
Note to Physician:	None Known	

SECTION 5		FIRE FIGHTING MEASURES
Extinguishing Media:	Use extinguishing agent suitable for type of surrounding fire.	
Protection of Firefighters:	<p>No unusual fire or explosion hazards are expected. Combustion can yield oxides of sulfur when heated above 1000°F (537°C).</p> <p>Positive pressure, self-contained breathing apparatus is required for all firefighting activities involving hazardous materials. Full structural firefighting (bunker) gear is the minimum acceptable attire. The need for proximity, entry, flashover and/or special chemical protective clothing (see Section 8) needs to be determined for each incident by a competent firefighting safety professional.</p> <p>Water used for fire suppression and cooling may become contaminated. Discharge to sewer system(s) or the environment may be restricted, requiring containment and proper disposal of water (see Section 6).</p>	

SECTION 6		ACCIDENTAL RELEASE MEASURES
Response Techniques:	<p>Stay upwind and away from spill (dust hazard). Wear appropriate protective equipment, including respiratory protection, as conditions warrant (see Section 8). Prevent spilled material from entering sewers, storm drains, other unauthorized treatment drainage systems, and natural waterways. Notify appropriate federal, state, and local agencies as may be required (see Section 15). Minimize dust generation. Sweep up and package appropriately for disposal. Large spills can harm or kill vegetation.</p>	

SECTION 7		HANDLING AND STORAGE
Handling:	The use of appropriate respiratory protection is advised when concentrations exceed any established exposure limits (see Section 8). Avoid contact with eyes, skin, and clothing. Wash thoroughly after handling. Wash contaminated clothing or shoes. Use good personal hygiene practices.	
Storage:	Use and store this material in dry, well-ventilated areas. Store only in approved containers. Keep container(s) tightly closed. Keep away from any incompatible material (see Section 10). Protect container(s) against physical damage. Material may absorb moisture from the air.	



SECTION 8		EXPOSURE CONTROLS / PERSONAL PROTECTION	
Engineering Controls:	Use process enclosure, general dilution ventilation or local exhaust systems where necessary to maintain airborne dust concentration below the OSHA standards or in accordance with applicable regulations.		
Personal Protective Equipment (PPE):	Eye/Face:	Approved eye protection to safeguard against potential eye contact, irritation, or injury is recommended.	
	Skin:	The use of cloth or leather work gloves is advised to prevent skin contact, possible irritation and absorption.	
	Respiratory:	A NIOSH approved air purifying respirator with a type 95 (R or P) particulate filter may be used under conditions where airborne concentrations are expected to exceed exposure limits. Protection provided by air purifying respirators is limited (see manufacturer's respirator selection guide). Use a positive pressure air supplied respirator if there is potential for uncontrolled release, exposure levels are not known or any other circumstances where air purifying respirators may not provide adequate protection. A respiratory protection program that meets OSHA's 29 CFR 1910.134 and ANSI Z88.2 requirements must be followed if workplace conditions warrant a respirator.	
	Other:	A source of clean water should be available in the work area for flushing eyes and skin.	
General Hygiene Considerations:	Wash thoroughly after handling Use adequate ventilation		
Exposure Guidelines:	OSHA Permissible Exposure Limits (PEL):	Particulates Not Otherwise Regulated: 5 mg/m ³ TWA (respirable); 15 mg/m ³ TWA (total)	
	ACGIH Threshold Limit Value (TLV):	Particulates Not Otherwise Specified: 3 mg/m ³ TWA (respirable); 10 mg/m ³ TWA (inhalable)	

SECTION 9		PHYSICAL AND CHEMICAL PROPERTIES	
Note: Unless otherwise stated, values in this section are determined at 20°C (68°F) and 760 mm Hg (1 atm).			
Appearance:	White and pink to gray, crystalline or granular	Vapor Pressure (mm Hg):	Not applicable
Odor:	None	Vapor Density (air=1):	Not applicable
Odor Threshold:	No data available	Specific Gravity or Relative Density:	2.81 – 2.85
Physical state:	Crystalline or granular solid	Bulk Density:	Loose 83 - 94 lbs/ft ³ (1300 - 1505 kg/m ³);
pH:	Approx. 7 in a 5% solution	Solubility in Water:	Approximately 24.4% @ 77°F (25°C)
Melting Point/ Freezing Point:	972°C (1700°F)	Partition coefficient:	No data available
Boiling Point:	Not applicable	Auto-Ignition Temperature:	Not applicable
Flash Point:	Not applicable	Decomposition Temperature:	No data available
Evaporation Rate:	No data available	Viscosity:	No data available

Status: Revised
Section(s) Revised: All
Revision Date: 06/01/2015



Flammability:	Not applicable	Volatility:	Not applicable
Upper/lower Flammability or explosive limits	Not applicable		

SECTION 10	STABILITY AND REACTIVITY
Chemical Stability:	Stable under normal conditions of storage and handling.
Conditions to Avoid:	Mildly corrosive to metals in the presence of moisture.
Incompatible Materials:	Avoid contact with hot nitric acid, may cause evolution of toxic nitrosyl chloride. Contact with other strong acids may produce irritating hydrogen chloride gas. KCl may react violently with bromine trifluoride and may explode if mixed with potassium permanganate and sulfuric acid. NaCl can react with most noble metals, such as iron or steel, building materials (such as cement), bromine, or trifluoride. A potentially explosive reaction may occur if NaCl is mixed with dichloromaleic anhydride and urea. Electrolysis of mixtures containing NaCl and nitrogen compounds may form explosive nitrogen trichloride.
Hazardous Decomposition Products:	Combustion can yield oxides of sulfur when heated above 1000°F (537°C).
Corrosiveness:	Mildly corrosive to metals in the presence of moisture.
Hazardous Polymerization:	Will not occur

SECTION 11	TOXICOLOGICAL INFORMATION		
Substance:	Potassium Magnesium Sulfate		
Acute Oral Toxicity:	No data available		
Acute Inhalation Toxicity:	No data available		
Acute Dermal Toxicity:	No data available		
Substance:	Sodium Chloride		
Acute Oral Toxicity:	LD ₅₀ (rat, oral) > 3000 mg/kg LD ₅₀ (mouse, oral) > 4000 mg/kg		
Acute Inhalation Toxicity:	LC ₅₀ (rat) > 42 g/m ³ / 1 hour		
Acute Dermal Toxicity:	No data available		
Mutagenesis:	No data available	Target Organ	No data available
Developmental Toxicity:	No data available	Carcinogenicity	No data available

SECTION 12	ECOLOGICAL INFORMATION
Ecotoxicology:	When dissolved in water, sodium chloride creates an elevated level of salinity that may be harmful to fresh water aquatic species and to plants that are not salt-tolerant.



SECTION 13	DISPOSAL CONSIDERATIONS
	Recover or recycle if possible. Properly characterize all waste materials. Consult federal, state/provincial and local regulations regarding the proper disposal of this material. Prevent material from entering sewers, storm drains, other unauthorized treatment drainage systems, and natural waterways.

SECTION 14	TRANSPORT INFO
Regulatory Status:	Not regulated
Identification Number:	HTS 3104.90.01
Hazard Class:	Not applicable
Proper Shipping Name	Not applicable
Packing Group	Not applicable
DOT Emergency Response Guide Number:	Not applicable
Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code:	Not applicable
MARPOL Annex V:	Non-HME
IMO/IMDG:	Not applicable

SECTION 15	REGULATORY INFORMATION				
CERCLA:	Not listed				
RCRA 261.33:	Not listed				
SARA TITLE III: (Exemptions at 40 CFR, Part 370 may apply for agricultural use, or for quantities of less than 10,000 pounds on-site.)	Section 302/304: Not listed	RQ: No	TPQ: No		
	Section 311/312:				
	Acute: No	Chronic: No	Fire: No	Pressure: No	Reactivity: No
	Section 313: Not listed				
NTP, IARC, OSHA:	This material has not been identified as a carcinogen by NTP, IARC, or OSHA.				
Canada DSL and NDSL:	DSL: Yes NDSL: Not listed				
TSCA:	Listed on the TSCA Inventory				
CA Proposition 65: (Health & Safety Code Section 25249.5)	Warning: This product contains substances known to the State of California to cause cancer and/or birth defects or other reproductive harm.				
WHMIS:	WHMIS 2015 This SDS has been prepared according to the hazard criteria of the Hazardous Products Regulations (HPR) and the SDS contains all of the information required by the HPR. WHMIS 1988 (Repealed) Classifications and/or symbols from the Controlled Products Regulations (CPR) are included in the Other Hazardous Classifications in Section 16 for reference.				



SECTION 16	OTHER INFORMATION					
Disclaimer:	<p>The information in this document is believed to be correct as of the date issued. HOWEVER, MOSAIC MAKES NO GUARANTEE, REPRESENTATION, OR WARRANTY, EITHER EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE REGARDING THE ACCURACY OR COMPLETENESS OF THIS INFORMATION, THE RESULTS TO BE OBTAINED FROM THE USE OF THIS INFORMATION OR THE PRODUCT, THE SAFETY OF THIS PRODUCT, OR THE HAZARDS RELATED TO THE USE OF THIS PRODUCT.</p> <p>User is responsible for determining whether this product is fit for a particular purpose and suitable for user's method of use or application and assumes the risk of use thereof. The conditions and use of this product are beyond the control of Mosaic, and Mosaic disclaims any liability for loss or damage incurred in connection with the use or misuse of this product. Each user should review the recommended industrial hygiene and safe handling procedures in the specific context of the intended use and determine whether they are appropriate.</p>					
Preparation:	The preparation of this SDS was in accordance with ANSI Z400.1-2010.					
Revision Date:	June 1, 2015					
Sections Revised:	All					
SDS Number:	MOS 100042					
References:	Globally Harmonized System of Classification and Labelling of Chemicals (GHS) – 4 th Edition 2011 OSHA Hazard Communication Standard, 2012 MARPOL Annex V; The Fertilizer Institute (TFI), 2003; TOXNET Tomes, Toxnet, Grant (4 th Ed.), RTECS					
Other Hazard Classifications:	NFPA HAZARD CLASS		HMIS HAZARD CLASS		WHMIS 1988 (CPR) HAZARD CLASS	
	Health:	1	Health:	1	Symbol	N/A
	Flammability:	0	Flammability:	0	Classification	Not WHMIS Controlled
	Instability:	0	Physical Hazard:	0	Sub Class	N/A
	Special Hazard:	None	PPE:	Section 8		
	WHMIS 2015 (HPR) HAZARD CLASS					
	Signal Word	N/A				
	Symbol	N/A				
	Classification	Not WHMIS Controlled				
	Hazard Statements	N/A				

Best Nitra King 19-4-4 with 2.2% Iron

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Product form : Mixture
Product name : Best Nitra King 19-4-4 with 2.2% Iron
Product code : M74081

1.2. Relevant identified uses of the substance or mixture and uses advised against

1.3. Details of the supplier of the safety data sheet

JR Simplot Company
Boise, ID 83707
T 1-208-336-2110

1.4. Emergency telephone number

Emergency number : CHEMTREC 1-800-424-9300

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification (GHS-US)

Eye Irrit. 2B H320
STOT SE 3 H335

Full text of H-phrases: see section 16

2.2. Label elements

GHS-US labeling

Hazard pictograms (GHS-US) :



GHS07

Signal word (GHS-US) :

Warning

Hazard statements (GHS-US) :

H320 - Causes eye irritation
H335 - May cause respiratory irritation

Precautionary statements (GHS-US) :

P261 - Avoid breathing dust/fume/gas/mist/vapors/spray
P264 - Wash ... thoroughly after handling
P271 - Use only outdoors or in a well-ventilated area
P304 + P340 - If inhaled: Remove person to fresh air and keep comfortable for breathing
P305+P351+P338 - If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P312 - Call a poison center/doctor/... if you feel unwell
P337 + P313 - If eye irritation persists: Get medical advice/attention
P403 + P233 - Store in a well-ventilated place. Keep container tightly closed
P405 - Store locked up
P501 - Dispose of contents/container to ...

2.3. Other hazards

No additional information available

2.4. Unknown acute toxicity (GHS-US)

No data available

SECTION 3: Composition/information on ingredients

3.1. Substance

Not applicable

3.2. Mixture

Name	Product identifier	%	Classification (GHS-US)
ammonium sulfate	(CAS No) 7783-20-2		Eye Irrit. 2B, H320 STOT SE 3, H335

Best Nitra King 19-4-4 with 2.2% Iron

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Name	Product identifier	%	Classification (GHS-US)
Calcium Ammonium Nitrate	(CAS No) 13780-11-5		Not classified
Monoammonium Phosphate	(CAS No) 7722-76-1		Eye Irrit. 2B, H320 STOT SE 3, H335
potassium sulfate	(CAS No) 7778-80-5		Not classified
Iron Oxysulfate			Eye Irrit. 2B, H320
wax (paraffins- petroleum)	(CAS No) 64771-72-8		Not classified
Sand			STOT SE 3, H335
diatomaceous earth	(CAS No) 61790-53-2		Eye Irrit. 2B, H320 STOT SE 3, H335

SECTION 4: First aid measures

4.1. Description of first aid measures

- First-aid measures general : Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label where possible).
- First-aid measures after inhalation : Remove to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER/doctor/physician if you feel unwell.
- First-aid measures after skin contact : Remove affected clothing and wash all exposed skin area with mild soap and water, followed by warm water rinse.
- First-aid measures after eye contact : IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
- First-aid measures after ingestion : Rinse mouth. Do NOT induce vomiting. Obtain emergency medical attention.

4.2. Most important symptoms and effects, both acute and delayed

- Symptoms/injuries after inhalation : May cause respiratory irritation.
- Symptoms/injuries after eye contact : Causes eye irritation.

4.3. Indication of any immediate medical attention and special treatment needed

No additional information available

SECTION 5: Firefighting measures

5.1. Extinguishing media

- Suitable extinguishing media : Foam. Dry powder. Carbon dioxide. Water spray. Sand.
- Unsuitable extinguishing media : Do not use a heavy water stream.

5.2. Special hazards arising from the substance or mixture

- Reactivity : Stable.

5.3. Advice for firefighters

- Firefighting instructions : Use water spray or fog for cooling exposed containers. Exercise caution when fighting any chemical fire. Prevent fire-fighting water from entering environment.
- Protection during firefighting : Do not enter fire area without proper protective equipment, including respiratory protection.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

- Emergency procedures : Evacuate unnecessary personnel.

6.1.2. For emergency responders

- Protective equipment : Equip cleanup crew with proper protection.
- Emergency procedures : Ventilate area.

6.2. Environmental precautions

Prevent entry to sewers and public waters. Notify authorities if liquid enters sewers or public waters.

6.3. Methods and material for containment and cleaning up

- Methods for cleaning up : On land, sweep or shovel into suitable containers. Minimize generation of dust. Store away from other materials.

6.4. Reference to other sections

See Heading 8. Exposure controls and personal protection.

Best Nitra King 19-4-4 with 2.2% Iron

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling : Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Provide good ventilation in process area to prevent formation of vapor. Avoid breathing dust/fume/gas/mist/vapors/spray. Use only outdoors or in a well-ventilated area.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions : Keep only in the original container in a cool, well ventilated place away from : Keep container tightly closed.

Incompatible products : Strong bases. Strong acids.

Incompatible materials : Sources of ignition. Direct sunlight.

7.3. Specific end use(s)

No additional information available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

No additional information available

8.2. Exposure controls

Personal protective equipment : Avoid all unnecessary exposure.

Hand protection : Wear protective gloves.

Eye protection : Chemical goggles or safety glasses.

Respiratory protection : Wear appropriate mask.

Other information : Do not eat, drink or smoke during use.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state : Solid

Appearance : Granules.

Color : Off-white and gray

Odor : characteristic

Odor threshold : No data available

pH : No data available

Relative evaporation rate (butyl acetate=1) : No data available

Melting point : No data available

Freezing point : No data available

Boiling point : No data available

Flash point : No data available

Auto-ignition temperature : No data available

Decomposition temperature : No data available

Flammability (solid, gas) : Non-flammable

Vapor pressure : No data available

Relative vapor density at 20 °C : No data available

Relative density : No data available

Solubility : Soluble.
Water: Solubility in water of component(s) of the mixture :
•: 77 g/100ml •: 38 g/100ml •: 11 g/100ml •: •:

Log Pow : No data available

Log Kow : No data available

Viscosity, kinematic : No data available

Viscosity, dynamic : No data available

Explosive properties : No data available

Oxidizing properties : No data available

Explosive limits : No data available

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9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

Stable.

10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

Not established.

10.4. Conditions to avoid

Direct sunlight. Extremely high or low temperatures.

10.5. Incompatible materials

Strong acids. Strong bases.

10.6. Hazardous decomposition products

fume. Carbon monoxide. Carbon dioxide.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity : Not classified

ammonium sulfate (7783-20-2)	
LD50 oral rat	2840 mg/kg (Rat)
LD50 dermal rat	> 2000 mg/kg
ATE US (oral)	2840.00000000 mg/kg body weight

Monoammonium Phosphate (7722-76-1)	
LD50 oral rat	5750 mg/kg (Rat)
LD50 dermal rat	> mg/kg
LD50 dermal rabbit	> 7940 mg/kg (Rabbit)
ATE US (oral)	5750.00000000 mg/kg body weight

potassium sulfate (7778-80-5)	
LD50 oral rat	6600 mg/kg (Rat)
ATE US (oral)	6600.00000000 mg/kg body weight

wax (paraffins- petroleum) (64771-72-8)	
LD50 oral rat	> 5000 mg/kg (Rat)
LD50 dermal rabbit	> 2000 mg/kg (Rabbit)

Skin corrosion/irritation : Not classified
Serious eye damage/irritation : Causes eye irritation.
Respiratory or skin sensitization : Not classified
Germ cell mutagenicity : Not classified
Carcinogenicity : Not classified

diatomaceous earth (61790-53-2)	
IARC group	3 - Not classifiable

Reproductive toxicity : Not classified
Specific target organ toxicity (single exposure) : May cause respiratory irritation.

Specific target organ toxicity (repeated exposure) : Not classified

Aspiration hazard : Not classified

Potential Adverse human health effects and symptoms : Based on available data, the classification criteria are not met.

Best Nitra King 19-4-4 with 2.2% Iron

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Symptoms/injuries after inhalation : May cause respiratory irritation.

Symptoms/injuries after eye contact : Causes eye irritation.

SECTION 12: Ecological information

12.1. Toxicity

ammonium sulfate (7783-20-2)	
LC50 fish 1	126 mg/l (96 h; <i>Poecilia reticulata</i>)
EC50 Daphnia 1	202 mg/l (96 h; <i>Daphnia magna</i>)
LC50 fish 2	250 - 480 mg/l (96 h; <i>Brachydanio rerio</i>)
EC50 Daphnia 2	433 mg/l (50 h; <i>Daphnia magna</i>)
TLM fish 1	1290 ppm (96 h; <i>Gambusia affinis</i>)

Monoammonium Phosphate (7722-76-1)	
LC50 fish 1	155 ppm (96 h; <i>Pimephales promelas</i>)

potassium sulfate (7778-80-5)	
LC50 fish 1	1692.4 mg/l (96 h; <i>Alburnus alburnus</i>)
LC50 other aquatic organisms 1	> 1000 mg/l (96 h)
EC50 Daphnia 1	890 mg/l (48 h; <i>Daphnia magna</i> ; Static system)
LC50 fish 2	653 - 796 mg/l (96 h; <i>Lepomis macrochirus</i>)
EC50 Daphnia 2	1180 mg/l (96 h; Crustacea)
TLM fish 1	3550 ppm (96 h; <i>Lepomis sp.</i>)
Threshold limit other aquatic organisms 1	> 1000 mg/l (96 h)
Threshold limit algae 1	2900 mg/l (72 h; <i>Scenedesmus subspicatus</i>)

12.2. Persistence and degradability

Best Nitra King 19-4-4 with 2.2% Iron	
Persistence and degradability	Not established.

ammonium sulfate (7783-20-2)	
Persistence and degradability	Biodegradability in water: no data available. Not established.

Monoammonium Phosphate (7722-76-1)	
Persistence and degradability	Biodegradability in water: no data available. Not established.

potassium sulfate (7778-80-5)	
Persistence and degradability	Biodegradability: not applicable. Not established.
Biochemical oxygen demand (BOD)	Not applicable
Chemical oxygen demand (COD)	Not applicable
ThOD	Not applicable
BOD (% of ThOD)	Not applicable

Iron Oxysulfate	
Persistence and degradability	Not established.

Sand	
Persistence and degradability	Not established.

wax (paraffins- petroleum) (64771-72-8)	
Persistence and degradability	Readily biodegradable in water.

diatomaceous earth (61790-53-2)	
Persistence and degradability	Biodegradability: not applicable. Not established.
Biochemical oxygen demand (BOD)	Not applicable
Chemical oxygen demand (COD)	Not applicable
ThOD	Not applicable
BOD (% of ThOD)	Not applicable

12.3. Bioaccumulative potential

Best Nitra King 19-4-4 with 2.2% Iron	
Bioaccumulative potential	Not established.

Best Nitra King 19-4-4 with 2.2% Iron

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ammonium sulfate (7783-20-2)	
Log Pow	-5.1
Bioaccumulative potential	Bioaccumulation: not applicable. Not established.
Monoammonium Phosphate (7722-76-1)	
Bioaccumulative potential	Not bioaccumulative. Not established.
potassium sulfate (7778-80-5)	
Bioaccumulative potential	Not bioaccumulative. Not established.
Iron Oxysulfate	
Bioaccumulative potential	Not established.
Sand	
Bioaccumulative potential	Not established.
wax (paraffins- petroleum) (64771-72-8)	
Bioaccumulative potential	No bioaccumulation data available.
diatomaceous earth (61790-53-2)	
Bioaccumulative potential	No bioaccumulation data available. Not established.

12.4. Mobility in soil

No additional information available

12.5. Other adverse effects

Effect on ozone layer : No additional information available

Effect on the global warming : No known ecological damage caused by this product.

Other information : Avoid release to the environment.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Waste disposal recommendations : Dispose in a safe manner in accordance with local/national regulations.

Ecology - waste materials : Avoid release to the environment.

SECTION 14: Transport information

In accordance with DOT

Not regulated for transport

Additional information

Other information : No supplementary information available.

ADR

Transport document description :

Transport by sea

No additional information available

Air transport

No additional information available

SECTION 15: Regulatory information

15.1. US Federal regulations

All components of this product are listed on the Toxic Substances Control Act (TSCA) inventory except for:

Iron Oxysulfate	CAS No	
Sand	CAS No	
wax (paraffins- petroleum)	CAS No 64771-72-8	

This product or mixture does not contain a toxic chemical or chemicals in excess of the applicable de minimis concentration as specified in 40 CFR §372.38(a) subject to the reporting requirements of section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372.

Best Nitra King 19-4-4 with 2.2% Iron

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Iron Oxysulfate
Not listed on the United States TSCA (Toxic Substances Control Act) inventory
Sand
Not listed on the United States TSCA (Toxic Substances Control Act) inventory

15.2. International regulations

CANADA

No additional information available

EU-Regulations

No additional information available

Classification according to Regulation (EC) No. 1272/2008 [CLP]

Classification according to Directive 67/548/EEC or 1999/45/EC

Not classified

15.2.2. National regulations

No additional information available

15.3. US State regulations

California Proposition 65 - This product does not contain any substances known to the state of California to cause cancer and/or reproductive harm

diatomaceous earth (61790-53-2)
U.S. - New Jersey - Right to Know Hazardous Substance List

SECTION 16: Other information

Other information

:
: None.

Full text of H-phrases: see section 16:

Eye Irrit. 2B	Serious eye damage/eye irritation Category 2B
STOT SE 3	Specific target organ toxicity (single exposure) Category 3
H320	Causes eye irritation
H335	May cause respiratory irritation

SDS US (GHS HazCom 2012)

Disclaimer: This information relates to the specific material designated and may not be valid for such material used in combination with any other materials or in any process. Such information is to the best of our knowledge and belief, accurate and reliable as of the date compiled. However, no representation, warranty or guarantee is made as to its accuracy, reliability or completeness. NO WARRANTY OF MERCHANTABILITY, FITNESS FOR ANY PARTICULAR PURPOSE, OR ANY OTHER WARRANTY, EXPRESS OR IMPLIED, IS MADE CONCERNING THE INFORMATION HEREIN PROVIDED. It is the user's responsibility to satisfy himself as to the suitability and completeness of such information for his own particular use. We do not accept liability for any loss or damage that may occur from the use of this information nor do we offer warranty against patent infringement.



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SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Product form : Mixture
Product name : Best Nitra King 21-2-4-2.0 Fe
Product code : M827857

1.2. Relevant identified uses of the substance or mixture and uses advised against

1.3. Details of the supplier of the safety data sheet

JR Simplot Company
P.O. Box 70013
Boise, ID 83707
T 1-208-336-2110

1.4. Emergency telephone number

Emergency number : CHEMTREC 1-800-424-9300

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

GHS-US classification

Eye Irrit. 2B H320
STOT SE 3 H335

Full text of H-phrases: see section 16

2.2. Label elements

GHS-US labelling

Hazard pictograms (GHS-US) :



GHS07

Signal word (GHS-US) :

Warning

Hazard statements (GHS-US) :

H320 - Causes eye irritation
H335 - May cause respiratory irritation

Precautionary statements (GHS-US) :

P261 - Avoid breathing dust/fume/gas/mist/vapours/spray
P264 - Wash ... thoroughly after handling
P271 - Use only outdoors or in a well-ventilated area
P304+P340 - If inhaled: Remove person to fresh air and keep comfortable for breathing
P305+P351+P338 - If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P312 - Call a poison center/doctor/... if you feel unwell
P337+P313 - If eye irritation persists: Get medical attention
P403+P233 - Store in a well-ventilated place. Keep container tightly closed
P405 - Store locked up
P501 - Dispose of contents/container to ...

2.3. Other hazards

No additional information available

2.4. Unknown acute toxicity (GHS-US)

Not applicable

SECTION 3: Composition/information on ingredients

3.1. Substance

Not applicable

3.2. Mixture

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Name	Product identifier	%	GHS-US classification
ASN-26 26-0-0			Eye Irrit. 2B, H320 STOT SE 3, H335
ammonium sulfate	(CAS No) 7783-20-2		Eye Irrit. 2B, H320 STOT SE 3, H335
potassium sulfate	(CAS No) 7778-80-5		Not classified
Monoammonium Phosphate	(CAS No) 7722-76-1		Eye Irrit. 2B, H320 STOT SE 3, H335
Iron Oxyulfate			Eye Irrit. 2B, H320
wax (paraffins- petroleum)	(CAS No) 64771-72-8		Not classified

Full text of H-phrases: see section 16

SECTION 4: First aid measures

4.1. Description of first aid measures

- First-aid measures general : Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label where possible).
- First-aid measures after inhalation : Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or doctor/physician if you feel unwell.
- First-aid measures after skin contact : Remove affected clothing and wash all exposed skin area with mild soap and water, followed by warm water rinse.
- First-aid measures after eye contact : IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
- First-aid measures after ingestion : Rinse mouth. Do NOT induce vomiting. Obtain emergency medical attention.

4.2. Most important symptoms and effects, both acute and delayed

- Symptoms/injuries after inhalation : May cause respiratory irritation.
- Symptoms/injuries after eye contact : Causes eye irritation.

4.3. Indication of any immediate medical attention and special treatment needed

No additional information available

SECTION 5: Firefighting measures

5.1. Extinguishing media

- Suitable extinguishing media : Foam. Dry powder. Carbon dioxide. Water spray. Sand.
- Unsuitable extinguishing media : Do not use a heavy water stream.

5.2. Special hazards arising from the substance or mixture

No additional information available

5.3. Advice for firefighters

- Firefighting instructions : Use water spray or fog for cooling exposed containers. Exercise caution when fighting any chemical fire. Prevent fire-fighting water from entering environment.
- Protection during firefighting : Do not enter fire area without proper protective equipment, including respiratory protection.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

- Emergency procedures : Evacuate unnecessary personnel.

6.1.2. For emergency responders

- Protective equipment : Equip cleanup crew with proper protection.
- Emergency procedures : Ventilate area.

6.2. Environmental precautions

Prevent entry to sewers and public waters. Notify authorities if liquid enters sewers or public waters.

6.3. Methods and material for containment and cleaning up

- Methods for cleaning up : On land, sweep or shovel into suitable containers. Minimize generation of dust. Store away from other materials.

6.4. Reference to other sections

See Heading 8. Exposure controls and personal protection.

Best Nitra King 21-2-4-2.0 Fe

Safety Data Sheet

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SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling : Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Provide good ventilation in process area to prevent formation of vapour. Avoid breathing dust/fume/gas/mist/vapours/spray. Use only outdoors or in a well-ventilated area.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions : Keep only in the original container in a cool, well ventilated place away from : Keep container tightly closed.

Incompatible products : Strong bases. Strong acids.

Incompatible materials : Sources of ignition. Direct sunlight.

7.3. Specific end use(s)

No additional information available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Best Nitra King 21-2-4-2.0 Fe	
ACGIH	Not applicable
OSHA	Not applicable
Monoammonium Phosphate (7722-76-1)	
ACGIH	Not applicable
OSHA	Not applicable
potassium sulfate (7778-80-5)	
ACGIH	Not applicable
OSHA	Not applicable
Iron Oxysulfate	
ACGIH	Not applicable
OSHA	Not applicable
wax (paraffins- petroleum) (64771-72-8)	
ACGIH	Not applicable
OSHA	Not applicable
ASN-26 26-0-0	
ACGIH	Not applicable
OSHA	Not applicable
ammonium sulfate (7783-20-2)	
ACGIH	Not applicable
OSHA	Not applicable

8.2. Exposure controls

Personal protective equipment : Avoid all unnecessary exposure.

Hand protection : Wear protective gloves.

Eye protection : Chemical goggles or safety glasses.

Respiratory protection : Wear appropriate mask.

Other information : Do not eat, drink or smoke during use.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state : Solid

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Appearance	: Granules.
Colour	: Multi-colored
Odour	: characteristic
Odour threshold	: No data available
pH	: No data available
Melting point	: No data available
Freezing point	: No data available
Boiling point	: No data available
Flash point	: No data available
Relative evaporation rate (butylacetate=1)	: No data available
Flammability (solid, gas)	: No data available
Explosive limits	: No data available
Explosive properties	: No data available
Oxidising properties	: No data available
Vapour pressure	: No data available
Relative density	: No data available
Relative vapour density at 20 °C	: No data available
Solubility	: Soluble. Water: Solubility in water of component(s) of the mixture : • Monoammonium Phosphate: 38 g/100ml • potassium sulfate: 11 g/100ml • wax (paraffins-petroleum): insoluble • ammonium sulfate: 77 g/100ml
Log Pow	: No data available
Log Kow	: No data available
Auto-ignition temperature	: No data available
Decomposition temperature	: No data available
Viscosity	: No data available
Viscosity, kinematic	: No data available
Viscosity, dynamic	: No data available

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

No additional information available

10.2. Chemical stability

Not established.

10.3. Possibility of hazardous reactions

Not established.

10.4. Conditions to avoid

Direct sunlight. Extremely high or low temperatures.

10.5. Incompatible materials

Strong acids. Strong bases.

10.6. Hazardous decomposition products

fume. Carbon monoxide. Carbon dioxide.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity : Not classified

Monoammonium Phosphate (7722-76-1)	
LD50 oral rat	5750 mg/kg (Rat)
LD50 dermal rat	> mg/kg

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Monoammonium Phosphate (7722-76-1)	
LD50 dermal rabbit	> 7940 mg/kg (Rabbit)
ATE US (oral)	5750.000 mg/kg bodyweight
potassium sulfate (7778-80-5)	
LD50 oral rat	6600 mg/kg (Rat)
ATE US (oral)	6600.000 mg/kg bodyweight
wax (paraffins- petroleum) (64771-72-8)	
LD50 oral rat	> 5000 mg/kg (Rat)
LD50 dermal rabbit	> 2000 mg/kg (Rabbit)
ammonium sulfate (7783-20-2)	
LD50 oral rat	2840 mg/kg (Rat)
LD50 dermal rat	> 2000 mg/kg
ATE US (oral)	2840.000 mg/kg bodyweight

Skin corrosion/irritation : Not classified

Serious eye damage/irritation : Causes eye irritation.

Respiratory or skin sensitisation : Not classified

Germ cell mutagenicity : Not classified

Carcinogenicity : Not classified

Reproductive toxicity : Not classified

Specific target organ toxicity (single exposure) : May cause respiratory irritation.

Specific target organ toxicity (repeated exposure) : Not classified

Aspiration hazard : Not classified

Potential adverse human health effects and symptoms : Based on available data, the classification criteria are not met.

Symptoms/injuries after inhalation : May cause respiratory irritation.

Symptoms/injuries after eye contact : Causes eye irritation.

SECTION 12: Ecological information

12.1. Toxicity

Monoammonium Phosphate (7722-76-1)	
LC50 fish 1	155 ppm (96 h; Pimephales promelas)
potassium sulfate (7778-80-5)	
LC50 fish 1	1692.4 mg/l (96 h; Alburnus alburnus)
LC50 other aquatic organisms 1	> 1000 mg/l (96 h)
EC50 Daphnia 1	890 mg/l (48 h; Daphnia magna; Static system)
LC50 fish 2	653 - 796 mg/l (96 h; Lepomis macrochirus)
EC50 Daphnia 2	1180 mg/l (96 h; Crustacea)
TLM fish 1	3550 ppm (96 h; Lepomis sp.)
Threshold limit other aquatic organisms 1	> 1000 mg/l (96 h)
Threshold limit algae 1	2900 mg/l (72 h; Scenedesmus subspicatus)
ammonium sulfate (7783-20-2)	
LC50 fish 1	126 mg/l (96 h; Poecilia reticulata)
EC50 Daphnia 1	202 mg/l (96 h; Daphnia magna)
LC50 fish 2	250 - 480 mg/l (96 h; Brachydanio rerio)
EC50 Daphnia 2	433 mg/l (50 h; Daphnia magna)
TLM fish 1	1290 ppm (96 h; Gambusia affinis)

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12.2. Persistence and degradability

Best Nitra King 21-2-4-2.0 Fe	
Persistence and degradability	Not established.
Monoammonium Phosphate (7722-76-1)	
Persistence and degradability	Biodegradability in water: no data available. Not established.
potassium sulfate (7778-80-5)	
Persistence and degradability	Biodegradability: not applicable. Not established.
Biochemical oxygen demand (BOD)	Not applicable
Chemical oxygen demand (COD)	Not applicable
ThOD	Not applicable
BOD (% of ThOD)	Not applicable
Iron Oxysulfate	
Persistence and degradability	Not established.
wax (paraffins- petroleum) (64771-72-8)	
Persistence and degradability	Readily biodegradable in water.
ASN-26 26-0-0	
Persistence and degradability	Not established.
ammonium sulfate (7783-20-2)	
Persistence and degradability	Biodegradability in water: no data available. Not established.

12.3. Bioaccumulative potential

Best Nitra King 21-2-4-2.0 Fe	
Bioaccumulative potential	Not established.
Monoammonium Phosphate (7722-76-1)	
Bioaccumulative potential	Not bioaccumulative. Not established.
potassium sulfate (7778-80-5)	
Bioaccumulative potential	Not bioaccumulative. Not established.
Iron Oxysulfate	
Bioaccumulative potential	Not established.
wax (paraffins- petroleum) (64771-72-8)	
Bioaccumulative potential	No bioaccumulation data available.
ASN-26 26-0-0	
Bioaccumulative potential	Not established.
ammonium sulfate (7783-20-2)	
Log Pow	-5.1
Bioaccumulative potential	Bioaccumulation: not applicable. Not established.

12.4. Mobility in soil

No additional information available

12.5. Other adverse effects

Effect on the global warming : No known ecological damage caused by this product.

Other information : Avoid release to the environment.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Waste disposal recommendations : Dispose in a safe manner in accordance with local/national regulations.

Ecology - waste materials : Avoid release to the environment.

Best Nitra King 21-2-4-2.0 Fe

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SECTION 14: Transport information

Department of Transportation (DOT)

In accordance with DOT

Not regulated for transport

Additional information

Other information : No supplementary information available.

ADR

No additional information available

Transport by sea

No additional information available

Air transport

No additional information available

SECTION 15: Regulatory information

15.1. US Federal regulations

All components of this product are listed, or excluded from listing, on the United States Environmental Protection Agency Toxic Substances Control Act (TSCA) inventory except for:

Iron Oxyulfate	CAS No	
wax (paraffins- petroleum)	CAS No 64771-72-8	
ASN-26 26-0-0	CAS No	

This product or mixture does not contain a toxic chemical or chemicals in excess of the applicable de minimis concentration as specified in 40 CFR §372.38(a) subject to the reporting requirements of section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372.

15.2. International regulations

CANADA

No additional information available

EU-Regulations

No additional information available

Classification according to Regulation (EC) No. 1272/2008 [CLP]

No additional information available

Classification according to Directive 67/548/EEC [DSD] or 1999/45/EC [DPD]

Not classified

National regulations

No additional information available

15.3. US State regulations

California Proposition 65 - This product does not contain any substances known to the state of California to cause cancer and/or reproductive harm

SECTION 16: Other information

Other information : None.

Best Nitra King 21-2-4-2.0 Fe

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Full text of H-phrases:

Eye Irrit. 2B	Serious eye damage/eye irritation, Category 2B
STOT SE 3	Specific target organ toxicity — Single exposure, Category 3, Respiratory tract irritation
H320	Causes eye irritation
H335	May cause respiratory irritation

SDS US (GHS HazCom 2012)

Disclaimer: This information relates to the specific material designated and may not be valid for such material used in combination with any other materials or in any process. Such information is to the best of our knowledge and belief, accurate and reliable as of the date compiled. However, no representation, warranty or guarantee is made as to its accuracy, reliability or completeness. NO WARRANTY OF MERCHANTABILITY, FITNESS FOR ANY PARTICULAR PURPOSE, OR ANY OTHER WARRANTY, EXPRESS OR IMPLIED, IS MADE CONCERNING THE INFORMATION HEREIN PROVIDED. It is the user's responsibility to satisfy himself as to the suitability and completeness of such information for his own particular use. We do not accept liability for any loss or damage that may occur from the use of this information nor do we offer warranty against patent infringement.



*** 1 Identification**

- **Product identifier**
- **Trade name: Plant Success Granular**
- **Product description:** Naturally occurring beneficial soil microorganism.
- **Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**
Plant Revolution, Inc.
412 Goetz Ave
Santa Ana, CA 92707
Ph: 714-545-5335
Fax: 714-545-5429
<http://www.plant-success.com/>
- **Emergency telephone number:** Josh Eagan 714-415-9290

*** 2 Hazard(s) identification**

- **Classification of the substance or mixture**



Health hazard

May cause cancer.
May cause damage to organs through prolonged or repeated exposure.



May cause respiratory irritation.

- **Label elements**
- **GHS label elements**
The product is classified and labeled according to the Globally Harmonized System (GHS).
- **Hazard pictograms**



GHS07



GHS08

- **Signal word** Danger
- **Hazard-determining components of labeling:**
Attapulgite (Palygorskite) (fibrous dust)
Quartz (SiO₂)
- **Hazard statements**
May cause cancer.
May cause respiratory irritation.
May cause damage to organs through prolonged or repeated exposure.
- **Precautionary statements**
Wear respiratory protection.
Use only outdoors or in a well-ventilated area.
Use personal protective equipment as required.
Do not handle until all safety precautions have been read and understood.



Safety Data Sheet (SDS)

OSHA HazCom 2012 Standard 29 CFR 1910.1200. Prepared to GHS Rev03.

Plant Revolution Inc.

Reviewed on 03/10/2015

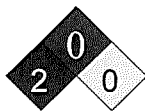
Trade name: *Plant Success Granular*

(Contd. of page 1)

- Do not breathe dust.
- Avoid breathing dust.
- IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
- IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
- IF exposed or concerned: Get medical advice/attention.
- Get medical advice/attention if you feel unwell.
- Call a POISON CENTER/doctor if you feel unwell.
- Store in a well-ventilated place. Keep container tightly closed.
- Dispose of contents/container in accordance with local/regional/national/international regulations.

· **Classification system:**

· **NFPA ratings (scale 0 - 4)**



Health = 2
 Fire = 0
 Reactivity = 0

· **HMSI-ratings (scale 0 - 4)**

HEALTH	2
FIRE	0
REACTIVITY	0

Health = *2
 Fire = 0
 Reactivity = 0

* 3 Composition/information on ingredients

- **Chemical characterization:** *Mixtures* Mycorrhizae species of fungi
- **Description:** Mixture of the substances listed below with nonhazardous additions.

· **Dangerous components:**

12174-11-7	Attapulgit (Palygorskite) (fibrous dust)	90-99%
	⚠ Carc. 2, H351; ⚠ STOT SE 3, H335	
14808-60-7	Quartz (SiO ₂)	5-10%
	⚠ Carc. 1A, H350; STOT RE 1, H372; ⚠ Acute Tox. 4, H332; STOT SE 3, H335; Eye Irrit. 2B, H320	

4 First-aid measures

- **Description of first aid measures**
- **After inhalation:** Supply fresh air. If required, provide artificial respiration. Consult doctor if symptoms persist.
- **After skin contact:**
Wash with soap and water. Then apply hand lotion.
Exposure to skin may cause mild irritation and dry skin.
- **After eye contact:**
Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.
- **After swallowing:** Give large amounts of water. If symptoms persist consult doctor.
- **Most important symptoms and effects, both acute and delayed** No further relevant information available.
- **Indication of any immediate medical attention and special treatment needed**
No further relevant information available.

* 5 Fire-fighting measures

- **Extinguishing media**
- **Suitable extinguishing agents:**
CO₂, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.

(Contd. on page 3)



Trade name: *Plant Success Granular*

(Contd. of page 2)

- **Special hazards arising from the substance or mixture** No further relevant information available.
- **Advice for firefighters**
- **Protective equipment:** Protective respiratory device.

6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures** Not required.
- **Environmental precautions:** Do not allow to enter sewers/ surface or ground water.
- **Methods and material for containment and cleaning up:**
Dispose contaminated material as waste according to section 13.
Ensure adequate ventilation.
- **Reference to other sections**
See Section 7 for information on safe handling.
See Section 8 for information on personal protection equipment.
See Section 13 for disposal information.

*** 7 Handling and storage**

- **Precautions for safe handling** Ensure good ventilation/exhaustion at the workplace.
- **Information about protection against explosions and fires:** No special measures required.
- **Conditions for safe storage, including any incompatibilities**
- **Storage:**
- **Requirements to be met by storerooms and receptacles:** No special requirements.
- **Information about storage in one common storage facility:** Not required.
- **Further information about storage conditions:**
Avoid consistent temperature above 120°F or it destroys the product.
Keep receptacle tightly sealed.
- **Specific end use(s)** No further relevant information available.

*** 8 Exposure controls/personal protection**

- **Additional information about design of technical systems:** No further data; see section 7.
- **Control parameters**
- **Components with limit values that require monitoring at the workplace:**

14808-60-7 Quartz (SiO2)	
PEL	see Quartz listing
REL	Long-term value: 0.05* mg/m ³ *respirable dust; See Pocket Guide App. A
TLV	Long-term value: 0.025* mg/m ³ *as respirable fraction

- **Additional information:** The lists that were valid during the creation were used as basis.
- **Exposure controls**
- **Personal protective equipment:**
- **General protective and hygienic measures:**
Avoid contact with the eyes.
Avoid contact with the eyes and skin.
Wash hands before breaks and at the end of work.
- **Breathing equipment:** Dust mask
- **Protection of hands:**
Exposure to skin may cause mild irritation and dry skin.
After each cleaning use treatment creams, for very dry skin greasy ointments.

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**Safety Data Sheet (SDS)**

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Plant Revolution Inc.

Reviewed on 03/10/2015

Trade name: *Plant Success Granular*

(Contd. of page 3)

- **Material of gloves** Not required under conditions of normal use.
- **Penetration time of glove material** Not applicable.
- **Eye protection:**
Non toxic but dust may irritate eyes. Flush eyes with clean water. Consult a physician if irritation persists.

*** 9 Physical and chemical properties**· **Information on basic physical and chemical properties**· **General Information**· **Appearance:****Form:** Granulate**Color:** Pale· **Odor:** Earthy Musty· **Odor threshold:** Not determined.· **pH-value:** Not applicable.· **Change in condition****Melting point/Melting range:** 1710 °C (3110 °F)**Boiling point/Boiling range:** 2230 °C (4046 °F)· **Flash point:** Not applicable.· **Flammability (solid, gaseous):** Not determined.· **Ignition temperature:****Decomposition temperature:** Not determined.· **Auto igniting:** Product is not self-igniting.· **Danger of explosion:** Product does not present an explosion hazard.· **Explosion limits:****Lower:** Not determined.**Upper:** Not determined.· **Vapor pressure:** Not applicable.· **Density @ 20 °C (68 °F):** 2.2 g/cm³ (18.359 lbs/gal)· **Relative density** Not determined.· **Vapor density** Not applicable.· **Evaporation rate** Not applicable.· **Solubility in / Miscibility with****Water:** Insoluble.· **Partition coefficient (n-octanol/water):** Not determined.· **Viscosity:****Dynamic:** Not applicable.**Kinematic:** Not applicable.· **Solvent content:****Organic solvents:** 0.0 %**Solids content:** 100.0 %· **Other information** No further relevant information available.

(Contd. on page 5)



Trade name: Plant Success Granular

(Contd. of page 4)

10 Stability and reactivity

- **Reactivity** No further relevant information available.
- **Chemical stability**
- **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
- **Possibility of hazardous reactions** No dangerous reactions known.
- **Conditions to avoid** No further relevant information available.
- **Incompatible materials:** No further relevant information available.
- **Hazardous decomposition products:** No dangerous decomposition products known.

11 Toxicological information

- **Information on toxicological effects**
- **Acute toxicity:**
- **Primary irritant effect:**
- **on the skin:** Irritant
- **on the eye:** Irritating effect.
- **Sensitization:** No sensitizing effects known.
- **Additional toxicological information:**
The product shows the following dangers according to internally approved calculation methods for preparations:
Harmful
Irritant

· **Carcinogenic categories**

· IARC (International Agency for Research on Cancer)		
12174-11-7	Attapulгите (Palygorskite) (fibrous dust)	2B
14808-60-7	Quartz (SiO ₂)	1
· NTP (National Toxicology Program)		
14808-60-7	Quartz (SiO ₂)	K
· OSHA-Ca (Occupational Safety & Health Administration)		
None of the ingredients is listed.		

***12 Ecological information**

- **Toxicity**
- **Aquatic toxicity:** None known
- **Persistence and degradability** No further relevant information available.
- **Bioaccumulative potential** No further relevant information available.
- **Mobility in soil** No further relevant information available.
- **Additional ecological information:**
- **General notes:**
Water hazard class 1 (Self-assessment): slightly hazardous for water
Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.
- **Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.
- **Other adverse effects** No further relevant information available.

(Contd. on page 6)



Trade name: *Plant Success Granular*

(Contd. of page 5)

***13 Disposal considerations**

- **Waste treatment methods**
- **Recommendation:** Recycle or dipose with household trash.
- **Uncleaned packagings:**
- **Recommendation:** Disposal must be made according to official regulations.

14 Transport information

- **UN-Number**
- **DOT, ADR, ADN, IMDG, IATA** Non-Regulated Material
- **UN proper shipping name**
- **DOT, ADR, ADN, IMDG, IATA** Non-Regulated Material
- **Transport hazard class(es)**
- **DOT, ADR, ADN, IMDG, IATA**
- **Class** Non-Regulated Material
- **Packing group**
- **DOT, ADR, IMDG, IATA** Non-Regulated Material
- **Environmental hazards:**
- **Marine pollutant:** No
- **Special precautions for user** Not applicable.
- **Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code** Not applicable.
- **UN "Model Regulation":** -

15 Regulatory information

- **Safety, health and environmental regulations/legislation specific for the substance or mixture**
- **Sara**

· **Section 355 (extremely hazardous substances):**

None of the ingredients is listed.

· **Section 313 (Specific toxic chemical listings):**

None of the ingredients is listed.

· **TSCA (Toxic Substances Control Act):**

14808-60-7 Quartz (SiO2)

· **Proposition 65**

· **Chemicals known to cause cancer:**

12174-11-7 Attapulgite (Palygorskite) (fibrous dust)

14808-60-7 Quartz (SiO2)

· **Chemicals known to cause reproductive toxicity for females:**

None of the ingredients is listed.

· **Chemicals known to cause reproductive toxicity for males:**

None of the ingredients is listed.

· **Chemicals known to cause developmental toxicity:**

None of the ingredients is listed.

(Contd. on page 7)



Trade name: *Plant Success Granular*

(Contd. of page 6)

· **Carcinogenic categories**

· **EPA (Environmental Protection Agency)**

None of the ingredients is listed.

· **TLV (Threshold Limit Value established by ACGIH)**

14808-60-7 Quartz (SiO₂)

A2

· **NIOSH-Ca (National Institute for Occupational Safety and Health)**

14808-60-7 Quartz (SiO₂)

· **GHS label elements**

The product is classified and labeled according to the Globally Harmonized System (GHS).

· **Hazard pictograms**



GHS07 GHS08

· **Signal word** Danger

· **Hazard-determining components of labeling:**

Attapulgite (Palygorskite) (fibrous dust)

Quartz (SiO₂)

· **Hazard statements**

May cause cancer.

May cause respiratory irritation.

May cause damage to organs through prolonged or repeated exposure.

· **Precautionary statements**

Wear respiratory protection.

Use only outdoors or in a well-ventilated area.

Use personal protective equipment as required.

Do not handle until all safety precautions have been read and understood.

Do not breathe dust.

Avoid breathing dust.

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.

IF exposed or concerned: Get medical advice/attention.

Get medical advice/attention if you feel unwell.

Call a POISON CENTER/doctor if you feel unwell.

Store in a well-ventilated place. Keep container tightly closed.

Dispose of contents/container in accordance with local/regional/national/international regulations.

· **National regulations:**

The product is subject to be labeled according with the prevailing version of the regulations on hazardous substances.

· **State Right to Know**

12174-11-7 Attapulgite (Palygorskite) (fibrous dust)

90-99%

⚠ Carc. 2, H351; ⚠ STOT SE 3, H335

14808-60-7 Quartz (SiO₂)

5-10%

⚠ Carc. 1A, H350; STOT RE 1, H372; ⚠ Acute Tox. 4, H332; STOT SE 3, H335; Eye Irrit. 2B, H320

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Plant Revolution Inc.

Reviewed on 03/10/2015

Trade name: Plant Success Granular

Mycorrhizae species of fungi

(Contd. of page 7)
≤ 2.5%

All ingredients are listed.

- **Chemical safety assessment:** A Chemical Safety Assessment has been carried out.

16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

- **Date of preparation / last revision** 03/10/2015

- **Abbreviations and acronyms:**

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)

IMDG: International Maritime Code for Dangerous Goods

DOT: US Department of Transportation

IATA: International Air Transport Association

ACGIH: American Conference of Governmental Industrial Hygienists

EINECS: European Inventory of Existing Commercial Chemical Substances

ELINCS: European List of Notified Chemical Substances

CAS: Chemical Abstracts Service (division of the American Chemical Society)

NFPA: National Fire Protection Association (USA)

HMIS: Hazardous Materials Identification System (USA)

Acute Tox. 4: Acute toxicity, Hazard Category 4

Eye Irrit. 2B: Serious eye damage/eye irritation, Hazard Category 2B

Carc. 1A: Carcinogenicity, Hazard Category 1A

Carc. 2: Carcinogenicity, Hazard Category 2

STOT SE 3: Specific target organ toxicity - Single exposure, Hazard Category 3

STOT RE 1: Specific target organ toxicity - Repeated exposure, Hazard Category 1

STOT RE 2: Specific target organ toxicity - Repeated exposure, Hazard Category 2



*** 1 Identification**

- **Product identifier**
- **Trade name: Plant Success Soluble**
- **Product description:** Naturally occurring beneficial soil microorganism.
- **Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**
Plant Revolution, Inc.
412 Goetz Ave
Santa Ana, CA 92707
Ph: 714-545-5335
Fax: 714-545-5429
<http://www.plant-success.com/>
- **Emergency telephone number:** Josh Eagan 714-415-9290

*** 2 Hazard(s) identification**

- **Classification of the substance or mixture**



Health hazard

May cause cancer.
May cause damage to organs through prolonged or repeated exposure.



May cause respiratory irritation.

- **Label elements**
- **GHS label elements**
The product is classified and labeled according to the Globally Harmonized System (GHS).
- **Hazard pictograms**



GHS07



GHS08

- **Signal word** Danger
- **Hazard-determining components of labeling:**
Attapulgite (Palygorskite) (fibrous dust)
Quartz (SiO₂)
- **Hazard statements**
May cause cancer.
May cause respiratory irritation.
May cause damage to organs through prolonged or repeated exposure.
- **Precautionary statements**
Wear respiratory protection.
Use only outdoors or in a well-ventilated area.
Use personal protective equipment as required.
Do not handle until all safety precautions have been read and understood.



Safety Data Sheet (SDS)

OSHA HazCom 2012 Standard 29 CFR 1910.1200. Prepared to GHS Rev03.

Reviewed on 03/10/2015

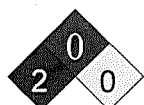
Trade name: *Plant Success Soluble*

(Contd. of page 1)

Do not breathe dust.
 Avoid breathing dust.
 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
 IF exposed or concerned: Get medical advice/attention.
 Get medical advice/attention if you feel unwell.
 Call a POISON CENTER/doctor if you feel unwell.
 Store in a well-ventilated place. Keep container tightly closed.
 Dispose of contents/container in accordance with local/regional/national/international regulations.

Classification system:

NFPA ratings (scale 0 - 4)



Health = 2
 Fire = 0
 Reactivity = 0

HMIS-ratings (scale 0 - 4)



Health = *2
 Fire = 0
 Reactivity = 0

3 Composition/information on ingredients

- Chemical characterization:** *Mixtures* Mycorrhizae species of fungi
- Description:** Mixture of the substances listed below with nonhazardous additions.

Dangerous components:

12174-11-7	Attapulгите (Palygorskite) (fibrous dust) ⚠ Carc. 2, H351; ⚠ STOT SE 3, H335	50%
14808-60-7	Quartz (SiO ₂) ⚠ Carc. 1A, H350; STOT RE 1, H372; Acute Tox. 4, H332; STOT SE 3, H335; Eye Irrit. 2B, H320	5-10%
1415-93-6	Skin Irrit. 2; Eye Irrit. 2A; STOT SE 3; ⚠ H315, H319, H335	33%

4 First-aid measures

- Description of first aid measures**
- After inhalation:** Supply fresh air. If required, provide artificial respiration. Consult doctor if symptoms persist.
- After skin contact:**
 Wash with soap and water. Then apply hand lotion.
 Exposure to skin may cause mild irritation and dry skin.
- After eye contact:**
 Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.
- After swallowing:** Give large amounts of water. If symptoms persist consult doctor.
- Most important symptoms and effects, both acute and delayed** No further relevant information available.
- Indication of any immediate medical attention and special treatment needed**
 No further relevant information available.

5 Fire-fighting measures

- Extinguishing media**
- Suitable extinguishing agents:**
 CO₂, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.

(Contd. on page 3)



Trade name: *Plant Success Soluble*

(Contd. of page 2)

- **Special hazards arising from the substance or mixture** No further relevant information available.
- **Advice for firefighters**
- **Protective equipment:** Protective respiratory device.

6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures** Not required.
- **Environmental precautions:** Do not allow to enter sewers/ surface or ground water.
- **Methods and material for containment and cleaning up:**
 Dispose contaminated material as waste according to section 13.
 Ensure adequate ventilation.
- **Reference to other sections**
 See Section 7 for information on safe handling.
 See Section 8 for information on personal protection equipment.
 See Section 13 for disposal information.

*** 7 Handling and storage**

- **Precautions for safe handling** Ensure good ventilation/exhaustion at the workplace.
- **Information about protection against explosions and fires:** No special measures required.
- **Conditions for safe storage, including any incompatibilities**
- **Storage:**
- **Requirements to be met by storerooms and receptacles:** No special requirements.
- **Information about storage in one common storage facility:** Not required.
- **Further information about storage conditions:**
 Avoid constant temperature above 120°F or it destroys the product.
 Keep receptacle tightly sealed.
- **Specific end use(s)** No further relevant information available.

*** 8 Exposure controls/personal protection**

- **Additional information about design of technical systems:** No further data; see section 7.
- **Control parameters**

· **Components with limit values that require monitoring at the workplace:**

14808-60-7 Quartz (SiO₂)

PEL	see Quartz listing
REL	Long-term value: 0.05* mg/m ³ *respirable dust; See Pocket Guide App. A
TLV	Long-term value: 0.025* mg/m ³ *as respirable fraction

- **Additional information:** The lists that were valid during the creation were used as basis.
- **Exposure controls**
- **Personal protective equipment:**
- **General protective and hygienic measures:**
 Avoid contact with the eyes.
 Avoid contact with the eyes and skin.
 Wash hands before breaks and at the end of work.
- **Breathing equipment:** Dust mask
- **Protection of hands:**
 Exposure to skin may cause mild irritation and dry skin.
 After each cleaning use treatment creams, for very dry skin greasy ointments.

(Contd. on page 4)



Trade name: *Plant Success Soluble*

(Contd. of page 3)

- **Material of gloves** Not required under conditions of normal use.
- **Penetration time of glove material** Not applicable.
- **Eye protection:**
Non toxic but dust may irritate eyes. Flush eyes with clean water. Consult a physician if irritation persists.

*** 9 Physical and chemical properties**

- **Information on basic physical and chemical properties**
- **General Information**
- **Appearance:**
 - **Form:** Powder
 - **Color:** Light to dark black
 - **Odor:** Earthy Musty
 - **Odor threshold:** Not determined.
- **pH-value:** Not applicable.
- **Change in condition**
 - **Melting point/Melting range:** 1710 °C (3110 °F)
 - **Boiling point/Boiling range:** 2230 °C (4046 °F)
- **Flash point:** Not applicable.
- **Flammability (solid, gaseous):** Not determined.
- **Ignition temperature:**
 - **Decomposition temperature:** Not determined.
- **Auto igniting:** Product is not self-igniting.
- **Danger of explosion:** Product does not present an explosion hazard.
- **Explosion limits:**
 - **Lower:** Not determined.
 - **Upper:** Not determined.
- **Vapor pressure:** Not applicable.
- **Density @ 20 °C (68 °F):** 2.2 g/cm³ (18.359 lbs/gal)
- **Relative density** Not determined.
- **Vapor density** Not applicable.
- **Evaporation rate** Not applicable.
- **Solubility in / Miscibility with Water:** Insoluble.
- **Partition coefficient (n-octanol/water):** Not determined.
- **Viscosity:**
 - **Dynamic:** Not applicable.
 - **Kinematic:** Not applicable.
- **Solvent content:**
 - **Organic solvents:** 0.0 %
 - **Solids content:** 100.0 %
- **Other information** No further relevant information available.

(Contd. on page 5)



Trade name: *Plant Success Soluble*

(Contd. of page 4)

10 Stability and reactivity

- **Reactivity** No further relevant information available.
- **Chemical stability**
- **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
- **Possibility of hazardous reactions** No dangerous reactions known.
- **Conditions to avoid** No further relevant information available.
- **Incompatible materials:** No further relevant information available.
- **Hazardous decomposition products:** No dangerous decomposition products known.

11 Toxicological information

- **Information on toxicological effects**
- **Acute toxicity:**
- **Primary irritant effect:**
- **on the skin:** Irritant
- **on the eye:** Irritating effect.
- **Sensitization:** No sensitizing effects known.
- **Additional toxicological information:**
The product shows the following dangers according to internally approved calculation methods for preparations:
Harmful
Irritant

· **Carcinogenic categories**

· **IARC (International Agency for Research on Cancer)**

12174-11-7 Attapulgite (Palygorskite) (fibrous dust)	2B
14808-60-7 Quartz (SiO2)	1

· **NTP (National Toxicology Program)**

14808-60-7 Quartz (SiO2)	K
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· **OSHA-Ca (Occupational Safety & Health Administration)**

None of the ingredients is listed.

***12 Ecological information**

- **Toxicity**
- **Aquatic toxicity:** None known
- **Persistence and degradability** No further relevant information available.
- **Bioaccumulative potential** No further relevant information available.
- **Mobility in soil** No further relevant information available.
- **Additional ecological information:**
- **General notes:**
Water hazard class 1 (Self-assessment): slightly hazardous for water
Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.
- **Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.
- **Other adverse effects** No further relevant information available.

(Contd. on page 6)



Trade name: Plant Success Soluble

(Contd. of page 5)

***13 Disposal considerations**

- **Waste treatment methods**
- **Recommendation:** Recycle or dipose with household trash.
- **Uncleaned packagings:**
- **Recommendation:** Disposal must be made according to official regulations.

14 Transport information

- **UN-Number**
- **DOT, ADR, ADN, IMDG, IATA** Non-Regulated Material
- **UN proper shipping name**
- **DOT, ADR, ADN, IMDG, IATA** Non-Regulated Material
- **Transport hazard class(es)**
- **DOT, ADR, ADN, IMDG, IATA**
- **Class** Non-Regulated Material
- **Packing group**
- **DOT, ADR, IMDG, IATA** Non-Regulated Material
- **Environmental hazards:**
- **Marine pollutant:** No
- **Special precautions for user** Not applicable.
- **Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code** Not applicable.
- **UN "Model Regulation":** -

15 Regulatory information

- **Safety, health and environmental regulations/legislation specific for the substance or mixture**
- **Sara**

· **Section 355 (extremely hazardous substances):**

None of the ingredients is listed.

· **Section 313 (Specific toxic chemical listings):**

None of the ingredients is listed.

· **TSCA (Toxic Substances Control Act):**

14808-60-7 Quartz (SiO2)

· **Proposition 65**

· **Chemicals known to cause cancer:**

12174-11-7 Attapulgite (Palygorskite) (fibrous dust)

14808-60-7 Quartz (SiO2)

· **Chemicals known to cause reproductive toxicity for females:**

None of the ingredients is listed.

· **Chemicals known to cause reproductive toxicity for males:**

None of the ingredients is listed.

· **Chemicals known to cause developmental toxicity:**

None of the ingredients is listed.

(Contd. on page 7)



Safety Data Sheet (SDS)

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Reviewed on 03/10/2015

Trade name: Plant Success Soluble

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Carcinogenic categories

EPA (Environmental Protection Agency)

None of the ingredients is listed.

TLV (Threshold Limit Value established by ACGIH)

14808-60-7 Quartz (SiO2)

A2

NIOSH-Ca (National Institute for Occupational Safety and Health)

14808-60-7 Quartz (SiO2)

GHS label elements

The product is classified and labeled according to the Globally Harmonized System (GHS).

Hazard pictograms



GHS07 GHS08

Signal word Danger

Hazard-determining components of labeling:

Attapulgit (Palygorskite) (fibrous dust)

Quartz (SiO2)

Hazard statements

May cause cancer.

May cause respiratory irritation.

May cause damage to organs through prolonged or repeated exposure.

Precautionary statements

Wear respiratory protection.

Use only outdoors or in a well-ventilated area.

Use personal protective equipment as required.

Do not handle until all safety precautions have been read and understood.

Do not breathe dust.

Avoid breathing dust.

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.

IF exposed or concerned: Get medical advice/attention.

Get medical advice/attention if you feel unwell.

Call a POISON CENTER/doctor if you feel unwell.

Store in a well-ventilated place. Keep container tightly closed.

Dispose of contents/container in accordance with local/regional/national/international regulations.

National regulations:

The product is subject to be labeled according with the prevailing version of the regulations on hazardous substances.

State Right to Know

12174-11-7 Attapulgit (Palygorskite) (fibrous dust)

⊠ Carc. 2, H351; ⊠ STOT SE 3, H335

90-99%

14808-60-7 Quartz (SiO2)

⊠ Carc. 1A, H350; STOT RE 1, H372; ⊠ Acute Tox. 4, H332; STOT SE 3, H335;

Eye Irrit. 2B, H320

5-10%

(Contd. on page 8)



Trade name: *Plant Success Soluble*

Mycorrhizae species of fungi	(Contd. of page 7) ≤ 2.5%
All ingredients are listed.	
· Chemical safety assessment: A Chemical Safety Assessment has been carried out.	

16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

· **Date of preparation / last revision** 03/10/2015

· **Abbreviations and acronyms:**

- ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
- IMDG: International Maritime Code for Dangerous Goods
- DOT: US Department of Transportation
- IATA: International Air Transport Association
- ACGIH: American Conference of Governmental Industrial Hygienists
- EINECS: European Inventory of Existing Commercial Chemical Substances
- ELINCS: European List of Notified Chemical Substances
- CAS: Chemical Abstracts Service (division of the American Chemical Society)
- NFPA: National Fire Protection Association (USA)
- HMIS: Hazardous Materials Identification System (USA)
- Acute Tox. 4: Acute toxicity, Hazard Category 4
- Eye Irrit. 2B: Serious eye damage/eye irritation, Hazard Category 2B
- Carc. 1A: Carcinogenicity, Hazard Category 1A
- Carc. 2: Carcinogenicity, Hazard Category 2
- STOT SE 3: Specific target organ toxicity - Single exposure, Hazard Category 3
- STOT RE 1: Specific target organ toxicity - Repeated exposure, Hazard Category 1
- STOT RE 2: Specific target organ toxicity - Repeated exposure, Hazard Category 2

6-24-24 XB+

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Product form : Mixture
Product name : 6-24-24 XB+
Product code : M74089

1.2. Relevant identified uses of the substance or mixture and uses advised against

1.3. Details of the supplier of the safety data sheet

JR Simplot Company
Boise, ID 83707
T 1-208-336-2110

1.4. Emergency telephone number

Emergency number : CHEMTREC 1-800-424-9300

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification (GHS-US)

Eye Irrit. 2B H320
STOT SE 3 H335

Full text of H-phrases: see section 16

2.2. Label elements

GHS-US labeling

Hazard pictograms (GHS-US) :



GHS07

Signal word (GHS-US) :

Warning

Hazard statements (GHS-US) :

H320 - Causes eye irritation
H335 - May cause respiratory irritation

Precautionary statements (GHS-US) :

P261 - Avoid breathing dust/fume/gas/mist/vapors/spray
P264 - Wash ... thoroughly after handling
P271 - Use only outdoors or in a well-ventilated area
P304+P340 - If inhaled: Remove person to fresh air and keep comfortable for breathing
P305+P351+P338 - If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P312 - Call a poison center/doctor/... if you feel unwell
P337+P313 - If eye irritation persists: Get medical advice/attention
P403+P233 - Store in a well-ventilated place. Keep container tightly closed
P405 - Store locked up
P501 - Dispose of contents/container to ... specify in accordance with local/regional/national regulations

2.3. Other hazards

No additional information available

2.4. Unknown acute toxicity (GHS-US)

No data available

SECTION 3: Composition/information on ingredients

3.1. Substance

Not applicable

3.2. Mixture

6-24-24 XB+

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Name	Product identifier	%	Classification (GHS-US)
ammonium sulfate	(CAS No) 7783-20-2		Eye Irrit. 2B, H320 STOT SE 3, H335
Iron Oxysulfate			Eye Irrit. 2B, H320
potassium chloride	(CAS No) 7447-40-7		Not classified
Monoammonium Phosphate	(CAS No) 7722-76-1		Eye Irrit. 2B, H320 STOT SE 3, H335
Sand			STOT SE 3, H335
potassium sulfate	(CAS No) 7778-80-5		Not classified
Wax	(CAS No) 64771-72-8		Not classified

SECTION 4: First aid measures

4.1. Description of first aid measures

- First-aid measures general : Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label where possible).
- First-aid measures after inhalation : Assure fresh air breathing. Allow the victim to rest.
- First-aid measures after skin contact : Remove affected clothing and wash all exposed skin area with mild soap and water, followed by warm water rinse.
- First-aid measures after eye contact : Rinse immediately with plenty of water. Obtain medical attention if pain, blinking or redness persist.
- First-aid measures after ingestion : Rinse mouth. Do NOT induce vomiting. Obtain emergency medical attention.

4.2. Most important symptoms and effects, both acute and delayed

- Symptoms/injuries : Not expected to present a significant hazard under anticipated conditions of normal use.

4.3. Indication of any immediate medical attention and special treatment needed

No additional information available

SECTION 5: Firefighting measures

5.1. Extinguishing media

- Suitable extinguishing media : Foam. Dry powder. Carbon dioxide. Water spray. Sand.
- Unsuitable extinguishing media : Do not use a heavy water stream.

5.2. Special hazards arising from the substance or mixture

- Reactivity : Stable.

5.3. Advice for firefighters

- Firefighting instructions : Use water spray or fog for cooling exposed containers. Exercise caution when fighting any chemical fire. Prevent fire-fighting water from entering environment.
- Protection during firefighting : Do not enter fire area without proper protective equipment, including respiratory protection.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

- Emergency procedures : Evacuate unnecessary personnel.

6.1.2. For emergency responders

- Protective equipment : Equip cleanup crew with proper protection.
- Emergency procedures : Ventilate area.

6.2. Environmental precautions

Prevent entry to sewers and public waters. Notify authorities if liquid enters sewers or public waters.

6.3. Methods and material for containment and cleaning up

- Methods for cleaning up : On land, sweep or shovel into suitable containers. Minimize generation of dust. Store away from other materials.

6.4. Reference to other sections

See Heading 8. Exposure controls and personal protection.

6-24-24 XB+

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SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling : Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Provide good ventilation in process area to prevent formation of vapor.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions : Keep only in the original container in a cool, well ventilated place away from : Keep container closed when not in use.

Incompatible products : Strong bases. Strong acids.

Incompatible materials : Sources of ignition. Direct sunlight.

7.3. Specific end use(s)

No additional information available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

No additional information available

8.2. Exposure controls

Personal protective equipment : Avoid all unnecessary exposure.

Hand protection : Wear protective gloves.

Eye protection : Chemical goggles or safety glasses.

Respiratory protection : Wear appropriate mask.

Other information : Do not eat, drink or smoke during use.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state : Solid

Appearance : Gray granules.

Color : Gray

Odor : characteristic

Odor threshold : No data available

pH : No data available

Relative evaporation rate (butyl acetate=1) : No data available

Melting point : No data available

Freezing point : No data available

Boiling point : No data available

Flash point : °C Non-flammable

Auto-ignition temperature : No data available

Decomposition temperature : No data available

Flammability (solid, gas) : No data available

Vapor pressure : No data available

Relative vapor density at 20 °C : No data available

Relative density : No data available

Solubility : Water: Solubility in water of component(s) of the mixture :
•: 77 g/100ml •: 38 g/100ml •: 34 g/100ml •: 11 g/100ml

Log Pow : No data available

Log Kow : No data available

Viscosity, kinematic : No data available

Viscosity, dynamic : No data available

Explosive properties : No data available

Oxidizing properties : No data available

Explosive limits : No data available

9.2. Other information

No additional information available

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SECTION 10: Stability and reactivity

10.1. Reactivity

Stable.

10.2. Chemical stability

Stable. Not established.

10.3. Possibility of hazardous reactions

Not established.

10.4. Conditions to avoid

Extremely high temperatures. Direct sunlight. Extremely high or low temperatures.

10.5. Incompatible materials

Oxidizing agent. Prolonged contact may cause oxidation of unprotected metals. Strong acids. Strong bases.

10.6. Hazardous decomposition products

Extremely high temperatures. The product may reach melting point and decompose to release NH₃, SO_x, PO_x, or CN. fume. Carbon monoxide. Carbon dioxide.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity : Not classified

ammonium sulfate (7783-20-2)	
LD50 oral rat	2840 mg/kg (Rat)
LD50 dermal rat	> 2000 mg/kg
ATE US (oral)	2840.00000000 mg/kg body weight
Monoammonium Phosphate (7722-76-1)	
LD50 oral rat	5750 mg/kg (Rat)
LD50 dermal rat	> mg/kg
LD50 dermal rabbit	> 7940 mg/kg (Rabbit)
ATE US (oral)	5750.00000000 mg/kg body weight
potassium chloride (7447-40-7)	
LD50 oral rat	2600 mg/kg (Rat)
ATE US (oral)	2600.00000000 mg/kg body weight
potassium sulfate (7778-80-5)	
LD50 oral rat	6600 mg/kg (Rat)
ATE US (oral)	6600.00000000 mg/kg body weight

Skin corrosion/irritation : Not classified

Serious eye damage/irritation : Causes eye irritation.

Respiratory or skin sensitization : Not classified

Germ cell mutagenicity : Not classified
Based on available data, the classification criteria are not met

Carcinogenicity : Not classified

Reproductive toxicity : Not classified
Based on available data, the classification criteria are not met

Specific target organ toxicity (single exposure) : May cause respiratory irritation.

Specific target organ toxicity (repeated exposure) : Not classified
Based on available data, the classification criteria are not met

Aspiration hazard : Not classified
Based on available data, the classification criteria are not met

Potential Adverse human health effects and symptoms : Based on available data, the classification criteria are not met.

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SECTION 12: Ecological information

12.1. Toxicity

ammonium sulfate (7783-20-2)	
LC50 fish 1	126 mg/l (96 h; <i>Poecilia reticulata</i>)
EC50 Daphnia 1	202 mg/l (96 h; <i>Daphnia magna</i>)
LC50 fish 2	250 - 480 mg/l (96 h; <i>Brachydanio rerio</i>)
EC50 Daphnia 2	433 mg/l (50 h; <i>Daphnia magna</i>)
TLM fish 1	1290 ppm (96 h; <i>Gambusia affinis</i>)

Monoammonium Phosphate (7722-76-1)	
LC50 fish 1	155 ppm (96 h; <i>Pimephales promelas</i>)

potassium chloride (7447-40-7)	
LC50 fish 1	920 mg/l (96 h; <i>Gambusia affinis</i> ; Static system)
EC50 Daphnia 1	630 mg/l (48 h; <i>Ceriodaphnia dubia</i>)
LC50 fish 2	2010 mg/l (96 h; <i>Lepomis macrochirus</i> ; Static system)
EC50 Daphnia 2	660 mg/l (48 h; <i>Daphnia magna</i>)
Threshold limit algae 1	850 mg/l (72 h; <i>Scenedesmus subspicatus</i>)
Threshold limit algae 2	> 100 mg/l (72 h; <i>Scenedesmus subspicatus</i> ; GLP)

potassium sulfate (7778-80-5)	
LC50 fish 1	1692.4 mg/l (96 h; <i>Alburnus alburnus</i>)
LC50 other aquatic organisms 1	> 1000 mg/l (96 h)
EC50 Daphnia 1	890 mg/l (48 h; <i>Daphnia magna</i> ; Static system)
LC50 fish 2	653 - 796 mg/l (96 h; <i>Lepomis macrochirus</i>)
EC50 Daphnia 2	1180 mg/l (96 h; Crustacea)
TLM fish 1	3550 ppm (96 h; <i>Lepomis sp.</i>)
Threshold limit other aquatic organisms 1	> 1000 mg/l (96 h)
Threshold limit algae 1	2900 mg/l (72 h; <i>Scenedesmus subspicatus</i>)

12.2. Persistence and degradability

6-24-24 XB+	
Persistence and degradability	Not established.

ammonium sulfate (7783-20-2)	
Persistence and degradability	Biodegradability in water: no data available. Not established.

Monoammonium Phosphate (7722-76-1)	
Persistence and degradability	Biodegradability in water: no data available. Not established.

Iron Oxysulfate	
Persistence and degradability	Not established.

potassium chloride (7447-40-7)	
Persistence and degradability	Biodegradability: not applicable. Not established.
Biochemical oxygen demand (BOD)	Not applicable
Chemical oxygen demand (COD)	Not applicable
ThOD	Not applicable
BOD (% of ThOD)	Not applicable

potassium sulfate (7778-80-5)	
Persistence and degradability	Biodegradability: not applicable. Not established.
Biochemical oxygen demand (BOD)	Not applicable
Chemical oxygen demand (COD)	Not applicable
ThOD	Not applicable
BOD (% of ThOD)	Not applicable

Sand	
Persistence and degradability	Not established.

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Wax (64771-72-8)	
Persistence and degradability	Not established.

12.3. Bioaccumulative potential

6-24-24 XB+	
Bioaccumulative potential	Not established.

ammonium sulfate (7783-20-2)	
Log Pow	-5.1
Bioaccumulative potential	Bioaccumulation: not applicable. Not established.

Monoammonium Phosphate (7722-76-1)	
Bioaccumulative potential	Not bioaccumulative. Not established.

Iron Oxysulfate	
Bioaccumulative potential	Not established.

potassium chloride (7447-40-7)	
Log Pow	-0.46 (Estimated value)
Bioaccumulative potential	Bioaccumulation: not applicable. Not established.

potassium sulfate (7778-80-5)	
Bioaccumulative potential	Not bioaccumulative. Not established.

Sand	
Bioaccumulative potential	Not established.

Wax (64771-72-8)	
Bioaccumulative potential	Not established.

12.4. Mobility in soil

No additional information available

12.5. Other adverse effects

Effect on ozone layer : No additional information available
Effect on the global warming : No known ecological damage caused by this product.
Other information : Avoid release to the environment.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Waste disposal recommendations : Dispose in a safe manner in accordance with local/national regulations.
Ecology - waste materials : Avoid release to the environment.

SECTION 14: Transport information

In accordance with DOT

Not regulated for transport

Additional information

Other information : No supplementary information available.

ADR

Transport document description :

Transport by sea

No additional information available

Air transport

No additional information available

SECTION 15: Regulatory information

15.1. US Federal regulations

All components of this product are listed on the Toxic Substances Control Act (TSCA) inventory except for:

6-24-24 XB+

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Iron Oxysulfate	CAS No	C>=15.00% ; C<=30.00%
Sand	CAS No	C>=1.00% ; C<=10.00%

This product or mixture does not contain a toxic chemical or chemicals in excess of the applicable de minimis concentration as specified in 40 CFR §372.38(a) subject to the reporting requirements of section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372.

Iron Oxysulfate
Not listed on the United States TSCA (Toxic Substances Control Act) inventory
Sand
Not listed on the United States TSCA (Toxic Substances Control Act) inventory

15.2. International regulations

CANADA

No additional information available

EU-Regulations

No additional information available

Classification according to Regulation (EC) No. 1272/2008 [CLP]

Classification according to Directive 67/548/EEC or 1999/45/EC

Not classified

15.2.2. National regulations

No additional information available

15.3. US State regulations

California Proposition 65 - This product does not contain any substances known to the state of California to cause cancer and/or reproductive harm

SECTION 16: Other information

Data sources

: REGULATION (EC) No 1272/2008 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 16 December 2008 on classification, labeling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006.

Other information

: None.

Full text of H-phrases: see section 16:

Eye Irrit. 2B	Serious eye damage/eye irritation Category 2B
STOT SE 3	Specific target organ toxicity (single exposure) Category 3
H320	Causes eye irritation
H335	May cause respiratory irritation

SDS US (GHS HazCom 2012)

Disclaimer: This information relates to the specific material designated and may not be valid for such material used in combination with any other materials or in any process. Such information is to the best of our knowledge and belief, accurate and reliable as of the date compiled. However, no representation, warranty or guarantee is made as to its accuracy, reliability or completeness. NO WARRANTY OF MERCHANTABILITY, FITNESS FOR ANY PARTICULAR PURPOSE, OR ANY OTHER WARRANTY, EXPRESS OR IMPLIED, IS MADE CONCERNING THE INFORMATION HEREIN PROVIDED. It is the user's responsibility to satisfy himself as to the suitability and completeness of such information for his own particular use. We do not accept liability for any loss or damage that may occur from the use of this information nor do we offer warranty against patent infringement.





SAFETY DATA SHEET

Europe

Sulphate of Potash, Granular, 0-0-50

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

Product name : Sulphate of Potash, Granular, 0-0-50

EC number : Not applicable.

REACH Registration number

Registration number	Substance Identification
01-2119489441-34-XXXX	Sulphate of Potash

Product code : 658-27988; 4556-27988; 5376-27988; 5416-30800; 5436-30801

Product description : EC FERTILISER Sulphate of Potash 0-0-50

Product type : Granular solid.

Other means of identification : Not available.

1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses
Fertiliser. Manufacture of chemicals. Manufacture of speciality fertilisers.

Uses advised against	Reason
None identified.	Evaluation

1.3 Details of the supplier of the safety data sheet

Agrium Europe SA
 Avenue Louise 326/36
 1050 Bruxelles
 Belgium
 Tel : +32 (0)2 646 70 00
 Fax : +32 (0)2 646 68 60
 agrium@agrium.eu

e-mail address of person responsible for this SDS : productsafety@agrium.com

1.4 Emergency telephone number

National advisory body/Poison Centre

Telephone number : Agrium Safety Data Sheets are available in many languages at <http://www.agrium.com/products/ae>
 Physicians, Poison Centres, or the Public may contact Agrium's Global Emergency Response Number 24/7/365 for service in many languages at +00 1 303 389 1654
 AUSTRIA +43 1 40 400 2222
 BELGIUM 070 245 245
 BULGARIA +359 2 9154 409
 CROATIA (+385 1) 23-48-342
 CZECH REPUBLIC +420 224 919 293; +420 224 915 402
 DENMARK +45 82 12 12 12
 ESTONIA 16662; (+372) 626 93 90
 FINLAND 09 47 1977; +358 9 471 977
 FRANCE + 33 (0) 1 45 42 59 59
 GERMANY:
 Berlin +49 30 19240
 Bonn +49 228 287 3211
 Erfurt +49 361 730 730
 Freiburg +49 761 19240
 Gottingen +49 551 19240
 Homburg/Saar +49 6841 19240

SECTION 1: Identification of the substance/mixture and of the company/undertaking

Mainz +49 6841 19240
Munich +49 89 19240
Nurnberg +49 911 3892665
GREECE +30 10 779 3777
HUNGARY +36 80 20 11 99
ICELAND +354 525 111, +354 543 2222
IRELAND (REPUBLIC OF) 01 809 216 (public); +353 1 8379964 (professionals)
ITALY:
Bologna +39 051 647 8955
Catania +39 095 25 4409
Cesena +39 054 735 2612
Chieti +39 87 134 5362
Firenze +39 055 794 6150
Genoa +39 10 352 808
Lecce +39 0832 68 5374
Milan +39 02 6610 1029
Naples +39 081 45 9802
Pavia +39 03 822 4444
Pordenone +39 0434 399335
Reggio Calabria +39 96 581 1624
Roma +39 06 305 4343
Torino +39 011 663 7637
Trieste +39 04 0378 5373
LATVIA +371 6704 2473
LITHUANIA +370 5 236 20 52, +370 687 53378
MALTA 2545 6504
NETHERLANDS +31 30 274 88 88
POLAND:
Gdansk +48 58 301 65 16; +48 58 349 2831
Krakow +48 12 411 99 99
Łódź +48 42 63 14 724
Lublin +48 81 740 2675; +48 81 740 2676
Poznan +48 61 84 769 46
Rzeszów +48 17 86 64 000; +48 17 86 64 404
Sosnowiec +48 32 266 11 45
Warszawa +48 22 619 66 54; +48 22 619 08 97
Wrocław +48 71 343 30 08; +48 71 789 02 14
PORTUGAL 808 250 143; +351 21 330 3284
ROMANIA +40 21 230 8000
SLOVAKIA +421 2 54 77 4 166
SLOVENIA + 386 41 650 500
SPAIN +34 91 562 04 20
SWEDEN +46 8 33 12 31 (International) 112 (National)
SWITZERLAND +41 44 251 51 51 (145 from within Switzerland and Liechtenstein)
TURKEY 0 800 314 7900 (Turkey) only, or +90 0312 433 70 01
UNITED KINGDOM +44 (0)20 7188 0100

Supplier

Telephone number : Agrium Europe SA
EMERGENCY TELEPHONE NUMBERS:
Transportation: 00-1-303-389-1654
Medical: 00-1-303-389-1654

Hours of operation : 24/7/365

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Product definition : Mono-constituent substance

Classification according to Regulation (EC) No. 1272/2008 [CLP/GHS]

Eye Irrit. 2, H319

The product is classified as hazardous according to Regulation (EC) 1272/2008 as amended.

2.2 Label elements

SECTION 2: Hazards identification

Hazard pictograms :



Signal word : Warning
 Hazard statements : H319 Causes serious eye irritation.

Precautionary statements

General : P103 Read label before use.
 P102 Keep out of reach of children.
 P101 If medical advice is needed, have product container or label at hand.
Prevention : P280.6 Wear eye or face protection.
 P264 Wash hands thoroughly after handling.
Response : P305+P351+P338 Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
 P337 + P313 If eye irritation persists: Get medical attention.
Storage : Not applicable.
Disposal : Not applicable.
Hazardous ingredients : Potassium hydrogensulphate

Special packaging requirements

Containers to be fitted with child-resistant fastenings : Not applicable.
Tactile warning of danger : Not applicable.

2.3 Other hazards

Substance meets the criteria for PBT according to Regulation (EC) No. 1907/2006, Annex XIII : Not applicable. Inorganic salt.
Substance meets the criteria for vPvB according to Regulation (EC) No. 1907/2006, Annex XIII : No. Not applicable. Inorganic salt.
Other hazards which do not result in classification : Handling and/or processing of this material may generate a dust which can cause mechanical irritation of the eyes, skin, nose and throat.

SECTION 3: Composition/information on ingredients

3.1 Substances : Mono-constituent substance

Product/ingredient name	Identifiers	%	Classification Regulation (EC) No. 1272/2008 [CLP]	Type
Europe Potassium sulphate	REACH #: 01-2119489441-34-XXXX EC No.: 231-915-5 CAS: 7778-80-5	>85	Not classified.	[A]
Potassium hydrogensulphate	EC No. 231-594-1 CAS #: 7646-93-7	<3%	SKIN CORROSION/ IRRITATION 1B; H314 STOT SE 3; H335 See Section 16 for the full text of the H statements declared above.	[B]

There are no additional ingredients present which, within the current knowledge of the supplier, are classified and contribute to the classification of the substance and hence require reporting in this section.

Type

SECTION 3: Composition/information on ingredients

- [A] Constituent
- [B] Impurity
- [C] Stabilising additive

Occupational exposure limits, if available, are listed in Section 8.

SECTION 4: First aid measures

4.1 Description of first aid measures

- Eye contact** : Begin eye irrigation immediately. Exposures to eye irritants may require medical evaluation following decontamination if pain or irritation persists. Immediately rinse eyes with large quantities of water or saline for a minimum of 15 minutes. If possible, remove contact lenses being careful not to cause additional eye damage. If the initial water supply is insufficient, keep the affected area wet with a moist cloth and transfer the person to the nearest place where rinsing can be continued for the recommended length of time. For additional advice call the medical emergency number on this SDS or your poison center or physician.
- Inhalation** : No special measures are typically indicated. Remove to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.
- Skin contact** : No special measures required. Wash with soap and water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.
- Ingestion** : Wash out mouth with water. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Do not induce vomiting unless directed to do so by medical personnel. Get medical attention if symptoms occur.
- Protection of first-aiders** : No action shall be taken involving any personal risk or without suitable training. Decontaminate emergency personnel and equipment with soap and water.

4.2 Most important symptoms and effects, both acute and delayed

Potential acute health effects

- Eye contact** : Causes serious eye irritation.
- Inhalation** : Exposure to airborne concentrations above statutory or recommended exposure limits may cause irritation of the nose, throat and lungs.
- Skin contact** : No known significant effects or critical hazards.
- Ingestion** : No known significant effects or critical hazards.

Over-exposure signs/symptoms

- Eye contact** : Adverse symptoms may include the following:
irritation
redness
- Inhalation** : Adverse symptoms may include the following:
respiratory tract irritation
coughing
- Skin contact** : No specific data.
- Ingestion** : No specific data.

4.3 Indication of any immediate medical attention and special treatment needed

- Notes to physician** : Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled. For professional, multilingual, medical support, in case of medical emergencies involving Agrium products, telephone the Agrium global 24 hour Emergency Number: 00-1-303-389-1654
- Specific treatments** : No specific treatment.

SECTION 5: Firefighting measures

5.1 Extinguishing media

- Suitable extinguishing media** : Non-flammable. Material will not burn. Use an extinguishing agent suitable for the surrounding fire.
- Unsuitable extinguishing media** : None known.

5.2 Special hazards arising from the substance or mixture

SECTION 5: Firefighting measures

Hazards from the substance or mixture : No specific fire or explosion hazard.

Hazardous thermal decomposition products : Decomposition products may include the following materials:
sulfur oxides

5.3 Advice for firefighters

Special protective actions for fire-fighters : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.

Special protective equipment for fire-fighters : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode. Clothing for fire-fighters (including helmets, protective boots and gloves) conforming to European standard EN 469 will provide a basic level of protection for chemical incidents.

Additional information : No specific fire or explosion hazard. Contain and collect the water used to fight the fire for later treatment and disposal.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

For non-emergency personnel : No action shall be taken involving any personal risk or without suitable training. Keep unnecessary and unprotected personnel from entering. Avoid breathing dust.

For emergency responders : If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

6.2 Environmental precautions

: Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

6.3 Methods and material for containment and cleaning up

Small spill : Put on appropriate personal protective equipment (see Section 8). Move containers from spill area. Recover the material and use it for its intended purpose.
or
Dispose of surplus and non-recyclable products via a licensed waste disposal contractor.

Large spill : Use personal protective equipment as required. Avoid creating dusty conditions and prevent wind dispersal. Use appropriate equipment to put the spilled substance in a container for reuse or disposal. Recycle to process, if possible.
or
Dispose of via a licensed waste disposal contractor.

6.4 Reference to other sections

: See Section 1 for emergency contact information.
See Section 8 for information on appropriate personal protective equipment.
See Section 13 for additional waste treatment information.

SECTION 7: Handling and storage

The information in this section contains generic advice and guidance. The list of Identified Uses in Section 1 should be consulted for any available use-specific information provided in the Exposure Scenario(s).

7.1 Precautions for safe handling

Protective measures : Put on appropriate personal protective equipment (see Section 8). Avoid breathing dust. Do not ingest.

Advice on general occupational hygiene : Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

7.2 Conditions for safe storage, including any incompatibilities

SECTION 7: Handling and storage

Contact your sales representative or a metallurgical specialist to ensure compatibility with your equipment. Store in accordance with local regulations. Hygroscopic. Keep container tightly closed. Do not store in unlabelled containers. Use appropriate containment to avoid environmental contamination. May form steep piles that can collapse without warning when stored in bulk. Avoid forming steep slopes when removing product.

7.3 Specific end use(s)

- Recommendations** : See Annex to the Safety data sheet for additional information in the Exposure Scenario (s).
- Industrial sector specific solutions** : See Annex to the Safety data sheet for additional information in the Exposure Scenario (s).

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational exposure limits

Product/ingredient name	Exposure limit values
Europe No exposure limit value known.	
Belgium Potassium sulphate	Lijst Grenswaarden / Valeurs Limites (Belgium, 1/2010). : 10 mg/m ³ , (Inhalable fraction) 8 hours.
Bulgaria Potassium sulphate	България Министерство на труда и социалната политика и Министерството на здравеопазването (Bulgaria, 1/2012). Limit value 8 hours: 10 mg/m ³ 8 hours.
France Potassium sulphate	Ministère du travail (France, 6/2008). VME: 10 mg/m ³ , () 8 hours. Form:
Germany Potassium sulphate	TRGS900 AGW (Germany, 10/2014). Schichtmittelwert: 1.25 mg/m ³ , (Respirable fraction) 8 hours.
Latvia Potassium sulphate	Ministru kabineta - AER (Latvia, 2/2011). TWA: 10 mg/m ³ 8 hours.
Lithuania Potassium sulphate	Lietuvos Higienos Normos HN 23 (Lithuania, 10/2007). TWA: 10 mg/m ³ 8 hours.

Recommended monitoring procedures : If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment. Reference should be made to European Standard EN 689 for methods for the assessment of exposure by inhalation to chemical agents and national guidance documents for methods for the determination of hazardous substances.

DNELs/DMELs

Product/ingredient name	Type	Exposure	Value	Population	Effects
Sulphate of Potash	DNEL	Long term	21,3 mg/kg bw/day	Workers	Systemic Dermal
	DNEL	Long term	37,6 mg/m ³	Workers	Systemic Inhalation

PNECs

Product/ingredient name	Compartment Detail	Value	Method Detail
Potassium sulphate	Fresh water	0,68 mg/l	Assessment Factors

8.2 Exposure controls

SECTION 8: Exposure controls/personal protection

- Appropriate engineering controls** : Use only with adequate ventilation. If user operations generate dust, fumes, gas, vapour or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.
- Individual protection measures**
- Hygiene measures** : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Wash contaminated clothing before reusing.
- Eye/face protection** : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If operating conditions cause high dust concentrations to be produced, use dust goggles. Recommended: Goggles, face shield or other full-face protection should be worn if there is a risk of direct exposure to dust.
- Skin protection**
- Hand protection** : Inorganic salt. Prolonged or repeated exposure may dry the skin, causing irritation. Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.
- Body protection** : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
- Other skin protection** : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
- Respiratory protection** : Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator. Possible: disposable particulate mask
- Environmental exposure controls** : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance

- Physical state** : Solid. [Powder. Crystals.]
- Colour** : Colourless. White.
- Odour** : Odourless.
- Odour threshold** : Not available.
- pH** : 3 to 4 [Conc. (% w/w): 10%]
- Melting point/freezing point** : 1067°C
- Initial boiling point and boiling range** : 1689
- Flash point** : [Product does not sustain combustion.]
- Evaporation rate** : Not available.
- Flammability (solid, gas)** : Non-combustible.
- Upper/lower flammability or explosive limits** : Not applicable.
- Vapour pressure** : Not available.
- Vapour density** : Not available.
- Relative density** : 1,27 to 1,44
- Solubility(ies)** : Easily soluble in the following materials: hot water.
Soluble in the following materials: cold water.
- Solubility in water** : 120 g/l
- Partition coefficient: n-octanol/water** : Not available.
- Auto-ignition temperature** : Not applicable.

SECTION 9: Physical and chemical properties

Decomposition temperature : Not available.
 Viscosity : Not available.
 Explosive properties : No specific fire or explosion hazard.
 Oxidising properties : No oxidising ingredients present.

9.2 Other information

No additional information.

SECTION 10: Stability and reactivity

10.1 Reactivity : No known significant effects or critical hazards.
 10.2 Chemical stability : The product is stable.
 10.3 Possibility of hazardous reactions : Under normal conditions of storage and use, hazardous reactions will not occur.
 10.4 Conditions to avoid : No specific data.
 10.5 Incompatible materials : No specific data.
 10.6 Hazardous decomposition products : Under normal conditions of storage and use, hazardous decomposition products should not be produced.

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
Potassium sulphate	LD50 Oral	Rat	6600 mg/kg	-

Conclusion/Summary : Practically non-toxic

Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Exposure	Observation
Potassium sulphate	Irritating to eyes.				

Conclusion/Summary

Skin : No evidence of risk to humans.
 Eyes : Causes serious eye irritation.

Sensitisation

Conclusion/Summary

Skin : No known significant effects or critical hazards.
 Respiratory : No known significant effects or critical hazards.

Mutagenicity

Product/ingredient name	Test	Experiment	Result
Potassium sulphate	OECD 422 422 Combined Repeated Dose Toxicity Study with the Reproduction/ Developmental Toxicity Screening Test	Experiment: In vivo Subject: Mammalian-Animal Cell: Germ	Negative

Conclusion/Summary : No known significant effects or critical hazards.

Carcinogenicity

Conclusion/Summary : Not available.

SECTION 11: Toxicological information

Reproductive toxicity

Product/ingredient name	Maternal toxicity	Fertility	Developmental toxin	Species	Dose	Exposure
Potassium sulphate	Negative	Negative	Negative	Rat - Male, Female	Oral: 1500 mg/kg	53 days

Conclusion/Summary : Not considered to be toxic to the reproductive system.

Teratogenicity

Product/ingredient name	Result	Species	Dose	Exposure
Potassium sulphate	Negative - Oral	Rat - Male, Female	1500 mg/kg	53 days

Conclusion/Summary : No known significant effects or critical hazards.

Specific target organ toxicity (single exposure)

Not available.

Specific target organ toxicity (repeated exposure)

Not available.

Aspiration hazard

Not available.

Information on the likely routes of exposure : Not available.

Potential acute health effects

- Eye contact** : Causes serious eye irritation.
- Inhalation** : Exposure to airborne concentrations above statutory or recommended exposure limits may cause irritation of the nose, throat and lungs.
- Skin contact** : No known significant effects or critical hazards.
- Ingestion** : No known significant effects or critical hazards.

Symptoms related to the physical, chemical and toxicological characteristics

- Eye contact** : Adverse symptoms may include the following:
irritation
redness
- Inhalation** : Adverse symptoms may include the following:
respiratory tract irritation
coughing
- Skin contact** : No specific data.
- Ingestion** : No specific data.

Delayed and immediate effects and also chronic effects from short and long term exposure

Short term exposure

- Potential immediate effects** : Causes serious eye irritation.
- Potential delayed effects** : No known effect according to our database.

Long term exposure

- Potential immediate effects** : No known significant effects or critical hazards.
- Potential delayed effects** : No known effect according to our database.

Potential chronic health effects

Product/ingredient name	Result	Species	Dose	Exposure
Potassium sulphate	Chronic NOAEL Oral	Rat - Male, Female	1500 mg/kg	-

Conclusion/Summary : Not toxic.

SECTION 11: Toxicological information

- General** : No known significant effects or critical hazards.
Carcinogenicity : No known significant effects or critical hazards.
Mutagenicity : No known significant effects or critical hazards.
Teratogenicity : No known significant effects or critical hazards.
Developmental effects : No known significant effects or critical hazards.
Fertility effects : No known significant effects or critical hazards.

Other information : Not available.

SECTION 12: Ecological information

12.1 Toxicity

Product/ingredient name	Result	Species	Exposure
Potassium sulphate	Acute LC50 <680000 ug/L Fresh water	Daphnia - Ceriodaphnia dubia - <24 hours	48 hours
	Acute LC50 720000 ug/L Fresh water	Daphnia - Daphnia magna - <24 hours	48 hours
	Acute LC50 680000 ug/L Fresh water	Fish - Pimephales promelas - 1 to 7 days	96 hours

Conclusion/Summary : Practically non-toxic to aquatic organisms.

12.2 Persistence and degradability

Conclusion/Summary : According to EC criteria: Inherently biodegradable

Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
Potassium sulphate	-	-	Readily

12.3 Bioaccumulative potential

Not available.

12.4 Mobility in soil

Soil/water partition coefficient (K_{oc}) : Not available.

Mobility : Not available.

12.5 Results of PBT and vPvB assessment

PBT : Not applicable. Inorganic salt.

vPvB : No. Not applicable. Inorganic salt.

12.6 Other adverse effects : No known significant effects or critical hazards.

SECTION 13: Disposal considerations

The information in this section contains generic advice and guidance. The list of Identified Uses in Section 1 should be consulted for any available use-specific information provided in the Exposure Scenario(s).

13.1 Waste treatment methods

Product

Methods of disposal : The generation of waste should be avoided or minimised wherever possible. Significant quantities of waste product residues should not be disposed of via the foul sewer but processed in a suitable effluent treatment plant. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements.

Sulphate of Potash, Granular, 0-0-50

SECTION 13: Disposal considerations

Hazardous waste : Within the present knowledge of the supplier, this product is not regarded as hazardous waste, as defined by EU Directive 91/689/EEC.

European waste catalogue (EWC)

Waste code	Waste designation
06 03 14	solid salts and solutions other than those mentioned in 06 03 11 and 06 03 13

Packaging

Methods of disposal : The generation of waste should be avoided or minimised wherever possible. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible.

Special precautions : This material and its container must be disposed of in a safe way. Empty containers or liners may retain some product residues. Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers.

SECTION 14: Transport information

	ADR/RID	ADN	IMDG	IATA
14.1 UN number	Not regulated.	Not regulated.	Not regulated.	Not regulated.
14.2 UN proper shipping name	-	-	-	-
14.3 Transport hazard class(es)	-	-	-	-
14.4 Packing group	-	-	-	-
14.5 Environmental hazards	No.	No.	No.	No.
Additional information	-	-	-	-

14.6 Special precautions for user : Not available.

14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code : Not available.

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

EU Regulation (EC) No. 1907/2006 (REACH)

Annex XIV - List of substances subject to authorisation

Annex XIV

None of the components are listed.

Substances of very high concern

None of the components are listed.

Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles : Not applicable.

Other EU regulations

Europe inventory : This material is listed or exempted.

SECTION 15: Regulatory information

Black List Chemicals (76/464/EEC) : Not listed

Priority List Chemicals (793/93/EEC) : Not listed

Integrated pollution prevention and control list (IPPC) - Air : Not listed

Integrated pollution prevention and control list (IPPC) - Water : Not listed

National regulations

Germany

Storage class (TRGS 510) : 13

Hazard class for water : 1 Appendix No. 2

Technical instruction on air quality control : TA-Luft Number 5.2.1: 86-100%

References : General administrative regulations amending the administrative regulations on water endangering substances (2005)
Storage class (TRGS 510)
Primeira Disposição Administrativa Geral sobre a Lei de Controle de Emissões Federal (BImSchG) (TA Luft - TA Luft)

International regulations

Chemical Weapon Convention List Schedules I, II & III Chemicals

Not listed.

Montreal Protocol (Annexes A, B, C, E)

Not listed.

Stockholm Convention on Persistent Organic Pollutants

Not listed.

Rotterdam Convention on Prior Inform Consent (PIC)

Not listed.

UNECE Aarhus Protocol on POPs and Heavy Metals

Not listed.

15.2 Chemical Safety Assessment : Not available.

SECTION 16: Other information

Revision comments : Reference to classifications under Directive 1999/45/EC have been removed in accordance with current regulatory requirements given in Regulation (EC) No. 1272/2008, and Regulation (EC) No. 1907/2006.

☑ Indicates information that has changed from previously issued version.

Abbreviations and acronyms : ATE = Acute Toxicity Estimate
CLP = Classification, Labelling and Packaging Regulation [Regulation (EC) No. 1272/2008]
DMEL = Derived Minimal Effect Level
DNEL = Derived No Effect Level
EUH statement = CLP-specific Hazard statement
PBT = Persistent, Bioaccumulative and Toxic
PNEC = Predicted No Effect Concentration
RRN = REACH Registration Number
vPvB = Very Persistent and Very Bioaccumulative

Sulphate of Potash, Granular, 0-0-50

SECTION 16: Other information

Key literature references and sources for data :

- REGULATION (EC) No 1907/2006 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL OF 18 DECEMBER 2006, with successive adaptations, amendments, and corrigenda.
- REGULATION (EC) No 1272/2008 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL OF 16 DECEMBER 2008, with successive adaptations, amendments, and corrigenda.
- ECHA, European Chemicals Agency, Classification and Labelling Database
- DIRECTIVE 2012/18/EU OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL OF 4 JULY 2012
- European Agreement concerning the International Carriage of Dangerous Goods by Road (ADR), latest revision.
- Directive 2008/68/EC of the European Parliament and of the Council of 24 September 2008 on the inland transport of dangerous goods, with successive amendments.
- REGULATION (EC) No 2003/2003 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL OF 13 OCTOBER 2003 RELATING TO FERTILISERS, with successive adaptations, amendments, and corrigenda.
- American Conference of Governmental Industrial Hygienists, Threshold Limit Values for Chemical Substances, latest edition.
- Corrosion Data Survey, Sixth Edition, 1985, National Association of Corrosion Engineers
- ERG 2012 Emergency Response Guidebook
- IARC Monographs on the Evaluation of Carcinogenic Risks to Humans.
- The Fertilizer Institute, Toxicity Testing Results, March 2003

Procedure used to derive the classification according to Regulation (EC) No. 1272/2008 [CLP/GHS]

Classification	Justification
Eye Irrit. 2, H319	Expert judgment

Europe

Full text of abbreviated H statements	:	H319	Causes serious eye irritation.
Full text of classifications [CLP/GHS]	:	Eye Irrit. 2, H319	SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 2
Date of printing	:	10/16/2015.	
Date of issue/ Date of revision	:	10/16/2015.	
Date of previous issue	:	10/5/2015.	
Version	:	3.2	

Notice to reader

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Annex to the extended Safety Data Sheet (eSDS)

Industrial

Identification of the substance or mixture

Product definition : Mono-constituent substance
Code : 658-27988; 4556-27988; 5376-27988; 5416-30800; 5436-30801
Product name : Sulphate of Potash, Granular,
0-0-50

Section 1 - Title

Short title of the exposure scenario : Agrium SOP ES for Workers
List of use descriptors : **Identified use name:** Industrial use for the formulation of preparations, intermediate use, and end use in industrial settings.
Process Category: PROC05, PROC08a, PROC08b, PROC09, PROC26
Substance supplied to that use in form of: As such
Sector of end use: SU01, SU03, SU10
Subsequent service life relevant for that use: No.
Environmental Release Category: ERC02, ERC06a, ERC08c, ERC08f
Market sector by type of chemical product: PC12
Article category related to subsequent service life: Not applicable.
Environmental contributing scenarios : **Not applicable.**
Health Contributing scenarios : **Bulk transfers - PROC05, PROC08a, PROC08b, PROC09, PROC26**
Clean-down and maintenance of equipment - PROC05, PROC08a, PROC08b, PROC09, PROC26
Mixing operations (open systems) - PROC05, PROC08b
Product packaging - PROC09
Storage - PROC26

Number of the ES	: 1
Processes and activities covered by the exposure scenario	: Applicable to all identified Process Categories. An environmental assessment has not been done as the substance does not meet the criteria for being classified as dangerous for the environment.

Section 2 - Exposure controls

Contributing scenario controlling environmental exposure for 1:	Not applicable. Not applicable. Not classified as dangerous to the environment.
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Contributing scenario controlling worker exposure for 2:	Bulk transfers
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Product characteristics	: Solid, low dustiness.
Concentration of substance in mixture or article	: Covers percentage substance in the product up to 100%
Physical state	: Solid beads.
Dust	: Solid, low dustiness.
Amounts used	: Variable, from day to day.
Frequency and duration of use/exposure	: Use duration (h/d): >4
Human factors not influenced by risk management	: Not applicable.
Other given operational conditions affecting workers exposure	: Indoor/Outdoor use Amounts used

Area of use:	: Indoor and outdoor use.
Technical conditions and measures at process level (source) to prevent release	: Not applicable.
Process control/change measures	: Not applicable.
Technical conditions and measures to control dispersion from source towards the worker	: Use appropriate containment to avoid environmental contamination. Provide enhanced general ventilation by mechanical means.
Engineering controls	: Provide a good standard of general ventilation. Natural ventilation is from doors, windows etc. Controlled ventilation means air is supplied or removed by a powered fan.
Ventilation control measures	: Provide adequate ventilation and, if possible, use or install internal exhaust systems.
Organisational measures to prevent/limit releases, dispersion and exposure	: Not applicable.
Conditions and measures related to personal protection, hygiene and health evaluation	
Advice on general occupational hygiene	: A washing facility or water for eye and skin cleaning purposes should be present. Brush off contaminated clothing. Ensure good industrial hygiene. Provide eye shower and mark its location conspicuously.
Personal protection	: If operating conditions cause high dust concentrations to be produced, use dust goggles.
Respiratory protection	: If ventilation is inadequate, use respirator that will protect against dust/mist.

Contributing scenario controlling worker exposure for 3: Clean-down and maintenance of equipment

Product characteristics	: Solid, low dustiness.
Concentration of substance in mixture or article	: Covers percentage substance in the product up to 100%
Physical state	: Solid beads.
Dust	: Solid, low dustiness.
Amounts used	: Not applicable.
Frequency and duration of use/exposure	: Use duration (h/d): >4
Human factors not influenced by risk management	: Not applicable.
Other given operational conditions affecting workers exposure	: Indoor/Outdoor use
Area of use:	: Indoor and outdoor use.
Technical conditions and measures at process level (source) to prevent release	: Restrict access while emptying or maintaining the unit. Provide a good standard of general ventilation. Natural ventilation is from doors, windows etc. Controlled ventilation means air is supplied or removed by a powered fan. Since the emptied containers retain product residue, follow product insert warnings even after container is emptied.
Process control/change measures	: These controls may include segregation of areas, access only to authorised persons, permit to work systems, confined space working procedures, and hazard awareness training.
Technical conditions and measures to control dispersion from source towards the worker	: Provide a good standard of general ventilation. Natural ventilation is from doors, windows etc. Controlled ventilation means air is supplied or removed by a powered fan.
Engineering controls	: Provide a good standard of general ventilation. Natural ventilation is from doors, windows etc. Controlled ventilation means air is supplied or removed by a powered fan.

Ventilation control measures	: Provide adequate ventilation and, if possible, use or install internal exhaust systems.
Organisational measures to prevent/limit releases, dispersion and exposure	: Not applicable.
Conditions and measures related to personal protection, hygiene and health evaluation	
Advice on general occupational hygiene	: A washing facility or water for eye and skin cleaning purposes should be present. Brush off contaminated clothing. Pay attention to good general hygiene and housekeeping. Provide eye shower and mark its location conspicuously. When using do not eat or drink.
Personal protection	: If operating conditions cause high dust concentrations to be produced, use dust goggles.
Respiratory protection	: If ventilation is inadequate, use respirator that will protect against dust/mist.
Contributing scenario controlling worker exposure for 4: Mixing operations (open systems)	
Product characteristics	: Solid, low dustiness.
Concentration of substance in mixture or article	: Covers percentage substance in the product up to 100%
Physical state	: Solid beads.
Dust	: Solid, low dustiness.
Amounts used	: Not applicable.
Frequency and duration of use/exposure	: Use duration (h/d): >4
Human factors not influenced by risk management	: Not applicable.
Other given operational conditions affecting workers exposure	: Indoor use
Area of use:	: Indoor
Technical conditions and measures at process level (source) to prevent release	: Not applicable.
Process control/change measures	: Not applicable.
Technical conditions and measures to control dispersion from source towards the worker	: Use appropriate containment to avoid environmental contamination. Provide enhanced general ventilation by mechanical means.
Engineering controls	: Provide a good standard of general ventilation. Natural ventilation is from doors, windows etc. Controlled ventilation means air is supplied or removed by a powered fan.
Ventilation control measures	: Provide adequate ventilation and, if possible, use or install internal exhaust systems.
Organisational measures to prevent/limit releases, dispersion and exposure	: Not applicable.
Conditions and measures related to personal protection, hygiene and health evaluation	
Personal protection	: Goggles, face shield or other full-face protection should be worn if there is a risk of direct exposure to dust.

Contributing scenario controlling worker exposure for 5: Product packaging

Product characteristics	: Solid, low dustiness.
Concentration of substance in mixture or article	: Covers percentage substance in the product up to 100%
Physical state	: Solid beads.
Dust	: Solid, low dustiness.
Amounts used	: Not applicable.
Frequency and duration of use/exposure	: Use duration (h/d): >4
Human factors not influenced by risk management	: Not applicable.
Other given operational conditions affecting workers exposure	: Indoor use
Area of use:	: Indoor
Technical conditions and measures at process level (source) to prevent release	: Not applicable.
Process control/change measures	: Not applicable.
Technical conditions and measures to control dispersion from source towards the worker	: Ensure the area is organised, well lit and ventilated with enough space to deal with spills easily.
Engineering controls	: Provide a good standard of general ventilation. Natural ventilation is from doors, windows etc. Controlled ventilation means air is supplied or removed by a powered fan.
Ventilation control measures	: Ensure sufficient ventilation when re-packing damaged packages. Only use product in a well-ventilated area.
Organisational measures to prevent/limit releases, dispersion and exposure	: Not applicable.
Conditions and measures related to personal protection, hygiene and health evaluation	
Advice on general occupational hygiene	: A washing facility or water for eye and skin cleaning purposes should be present. Brush off contaminated clothing. When using do not eat or drink.
Personal protection	: If operating conditions cause high dust concentrations to be produced, use dust goggles.

Contributing scenario controlling worker exposure for 6: Storage

Product characteristics	: Solid, low dustiness.
Concentration of substance in mixture or article	: Covers percentage substance in the product up to 100%
Physical state	: Solid beads.
Dust	: Solid, low dustiness.
Amounts used	: Not applicable.
Frequency and duration of use/exposure	: Use duration (h/d): >4
Human factors not influenced by risk management	: Not applicable.
Other given operational conditions affecting workers exposure	: Indoor use
Area of use:	: Indoor

Sulphate of Potash, Granular, 0-0-50		Agrium SOP ES for Workers
Technical conditions and measures at process level (source) to prevent release	: Not applicable.	
Process control/change measures	: Not applicable.	
Technical conditions and measures to control dispersion from source towards the worker	: Use appropriate containment to avoid environmental contamination. Provide enhanced general ventilation by mechanical means.	
Engineering controls	: Provide a good standard of general ventilation. Natural ventilation is from doors, windows etc. Controlled ventilation means air is supplied or removed by a powered fan.	
Ventilation control measures	: Provide adequate ventilation and, if possible, use or install internal exhaust systems.	
Organisational measures to prevent/limit releases, dispersion and exposure	: Not applicable.	
Conditions and measures related to personal protection, hygiene and health evaluation		
Personal protection	: If operating conditions cause high dust concentrations to be produced, use dust goggles.	

Section 3 - Exposure estimation and reference to its source

Website:	: Qualitative approach used to conclude safe use.	
Exposure estimation and reference to its source - Environment: 1: Not applicable.		
Exposure assessment (environment):	: Qualitative approach used to conclude safe use.	
Exposure estimation	: Not available.	
Exposure estimation and reference to its source - Workers: 2: Bulk transfers		
Exposure assessment (human):	: Qualitative approach used to conclude safe use.	
Exposure estimation	: Estimated workplace exposures are not expected to exceed DNELs when the identified risk management measures are adopted.	
Exposure estimation and reference to its source - Workers: 3: Clean-down and maintenance of equipment		
Exposure assessment (human):	: Qualitative approach used to conclude safe use.	
Exposure estimation	: Estimated workplace exposures are not expected to exceed DNELs when the identified risk management measures are adopted.	
Exposure estimation and reference to its source - Workers: 4: Mixing operations (open systems)		
Exposure assessment (human):	: Qualitative approach used to conclude safe use.	
Exposure estimation	: Estimated workplace exposures are not expected to exceed DNELs when the identified risk management measures are adopted.	
Exposure estimation and reference to its source - Workers: 5: Product packaging		
Exposure assessment (human):	: Qualitative approach used to conclude safe use.	
Exposure estimation	: Estimated workplace exposures are not expected to exceed DNELs when the identified risk management measures are adopted.	
Exposure estimation and reference to its source - Workers: 6: Storage		
Exposure assessment (human):	: Qualitative approach used to conclude safe use.	
Exposure estimation	: Estimated workplace exposures are not expected to exceed DNELs when the identified risk management measures are adopted.	

Section 4 - Guidance to DU to evaluate whether he works inside the boundaries set by the ES

Environment	: No additional risk management measures required.
Health	: Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures.

Additional good practice advice beyond the REACH CSA

Environment	: Use containment as appropriate. Good hygiene practices and housekeeping measures
Health	: Not available.

Annex to the extended Safety Data Sheet (eSDS)

Professional

Product definition : Mono-constituent substance

Identification of the substance or mixture

Code : 1658-27988; 4556-27988; 5376-27988; 5416-30800; 5436-30801

Product name : Sulphate of Potash, Granular,
0-0-50

Section 1 - Title

Short title of the exposure scenario : Agrium SOP ES for Professionals

List of use descriptors : **Identified use name:** Professional use in formulation of preparations and end-use.
Process Category: PROC03, PROC08a, PROC08b, PROC09, PROC26
Substance supplied to that use in form of: As such
Sector of end use: SU01, SU03, SU10, SU22
Subsequent service life relevant for that use: No.
Environmental Release Category: ERC02, ERC08b, ERC08e
Market sector by type of chemical product: PC11, PC12, PC19, PC21, PC37

Environmental contributing scenarios : An environmental assessment has not been done as the substance does not meet the criteria for being classified as dangerous for the environment.

Health Contributing scenarios : All process categories are addressed by this contributing scenario as all Operational Conditions and Risk Management Measures are identical.

Number of the ES : 2

Processes and activities covered by the exposure scenario : Applicable to all identified Process Categories.

Section 2 - Exposure controls

Contributing scenario controlling environmental exposure for 1: An environmental assessment has not been done as the substance does not meet the criteria for being classified as dangerous for the environment.
Not applicable.

Contributing scenario controlling worker exposure for 1: All process categories are addressed by this contributing scenario as all Operational Conditions and Risk Management Measures are identical.

Product characteristics : Solid, low dustiness.

Concentration of substance in mixture or article : Covers percentage substance in the product up to 100%

Physical state : Solid beads.

Dust : Solid, low dustiness.

Amounts used : Variable.

Frequency and duration of use : >4 Hours per shift

Human factors not influenced by risk management : Not applicable.

Other given operational conditions affecting workers exposure : Indoor/Outdoor use

Area of use: : Indoor and outdoor use.

Technical conditions and measures at process level (source) to prevent release : Not applicable.

Technical conditions and measures to control dispersion from source towards the worker : Use containment as appropriate. Provide a good standard of general ventilation. Natural ventilation is from doors, windows etc. Controlled ventilation means air is supplied or removed by a powered fan.

Engineering controls	: Provide adequate ventilation.
Ventilation control measures	: Provide adequate ventilation and, if possible, use or install internal exhaust systems.
Product substance-related measures	: Avoid contact with eyes.
Organisational measures to prevent/limit releases, dispersion and exposure	: Not applicable.
Conditions and measures related to personal protection and hygiene	
Advice on general occupational hygiene	: Avoid contact with eyes. Ensure good industrial hygiene. If operating conditions cause high dust concentrations to be produced, use dust goggles.
Personal protection	: Use suitable eye protection. If operating conditions cause high dust concentrations to be produced, use dust goggles.

Section 3 - Exposure estimation and reference to its source

Website: : Qualitative approach used to conclude safe use.

Exposure estimation and reference to its source - Environment: 2: An environmental assessment has not been done as the substance does not meet the criteria for being classified as dangerous for the environment.

Exposure assessment (environment): : Not applicable.

Exposure estimation : Not available.

Exposure estimation and reference to its source - Workers:1: All process categories are addressed by this contributing scenario as all Operational Conditions and Risk Management Measures are identical.

Exposure assessment (human): : Qualitative approach used to conclude safe use.

Exposure estimation : Not available.

Section 4 - Guidance to DU to evaluate whether he works inside the boundaries set by the ES

Environment : Not applicable.

Health : No additional risk management measures required.

Additional good practice advice beyond the REACH CSA

Environment : Not available.

Health : Use containment as appropriate. Ensure control measures are regularly inspected and maintained. Pay attention to good general hygiene and housekeeping.



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SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Product form : Mixture
Product name : Best 9 Iron Minis 9-9-9 + 9%Fe
Product code : M74098

1.2. Relevant identified uses of the substance or mixture and uses advised against

1.3. Details of the supplier of the safety data sheet

JR Simplot Company
Boise, ID 83707
T 1-208-336-2110

1.4. Emergency telephone number

Emergency number : CHEMTREC 1-800-424-9300

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification (GHS-US)

Eye Irrit. 2B H320
STOT SE 3 H335

Full text of H-phrases: see section 16

2.2. Label elements

GHS-US labeling

Hazard pictograms (GHS-US) :



GHS07

Signal word (GHS-US) :

Warning

Hazard statements (GHS-US) :

H320 - Causes eye irritation
H335 - May cause respiratory irritation

Precautionary statements (GHS-US) :

P261 - Avoid breathing dust/fume/gas/mist/vapors/spray
P264 - Wash ... thoroughly after handling
P271 - Use only outdoors or in a well-ventilated area
P304+P340 - If inhaled: Remove person to fresh air and keep comfortable for breathing
P305+P351+P338 - If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P312 - Call a poison center/doctor/... if you feel unwell
P337+P313 - If eye irritation persists: Get medical advice/attention
P403+P233 - Store in a well-ventilated place. Keep container tightly closed
P405 - Store locked up
P501 - Dispose of contents/container to ...

2.3. Other hazards

No additional information available

2.4. Unknown acute toxicity (GHS-US)

No data available

SECTION 3: Composition/information on ingredients

3.1. Substance

Not applicable

3.2. Mixture

Name	Product identifier	%	Classification (GHS-US)
ammonium sulfate	(CAS No) 7783-20-2		Eye Irrit. 2B, H320 STOT SE 3, H335

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Name	Product identifier	%	Classification (GHS-US)
Monoammonium Phosphate	(CAS No) 7722-76-1		Eye Irrit. 2B, H320 STOT SE 3, H335
potassium sulfate	(CAS No) 7778-80-5		Not classified
Iron Oxysulfate			Eye Irrit. 2B, H320
Sand			STOT SE 3, H335

SECTION 4: First aid measures

4.1. Description of first aid measures

- First-aid measures general : Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label where possible).
- First-aid measures after inhalation : Assure fresh air breathing. Allow the victim to rest.
- First-aid measures after skin contact : Remove affected clothing and wash all exposed skin area with mild soap and water, followed by warm water rinse.
- First-aid measures after eye contact : Rinse immediately with plenty of water. Obtain medical attention if pain, blinking or redness persist.
- First-aid measures after ingestion : Rinse mouth. Do NOT induce vomiting. Obtain emergency medical attention.

4.2. Most important symptoms and effects, both acute and delayed

- Symptoms/injuries : Not expected to present a significant hazard under anticipated conditions of normal use.

4.3. Indication of any immediate medical attention and special treatment needed

No additional information available

SECTION 5: Firefighting measures

5.1. Extinguishing media

- Suitable extinguishing media : Foam. Dry powder. Carbon dioxide. Water spray. Sand.
- Unsuitable extinguishing media : Do not use a heavy water stream.

5.2. Special hazards arising from the substance or mixture

No additional information available

5.3. Advice for firefighters

- Firefighting instructions : Use water spray or fog for cooling exposed containers. Exercise caution when fighting any chemical fire. Prevent fire-fighting water from entering environment.
- Protection during firefighting : Do not enter fire area without proper protective equipment, including respiratory protection.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

- Emergency procedures : Evacuate unnecessary personnel.

6.1.2. For emergency responders

- Protective equipment : Equip cleanup crew with proper protection.
- Emergency procedures : Ventilate area.

6.2. Environmental precautions

Prevent entry to sewers and public waters. Notify authorities if liquid enters sewers or public waters.

6.3. Methods and material for containment and cleaning up

- Methods for cleaning up : On land, sweep or shovel into suitable containers. Minimize generation of dust. Store away from other materials.

6.4. Reference to other sections

See Heading 8. Exposure controls and personal protection.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

- Precautions for safe handling : Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Provide good ventilation in process area to prevent formation of vapor.

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7.2. Conditions for safe storage, including any incompatibilities

Storage conditions	: Keep only in the original container in a cool, well ventilated place away from	: Keep container closed when not in use.
Incompatible products	: Strong bases. Strong acids.	
Incompatible materials	: Sources of ignition. Direct sunlight.	

7.3. Specific end use(s)

No additional information available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

No additional information available

8.2. Exposure controls

Personal protective equipment	: Avoid all unnecessary exposure.
Hand protection	: Wear protective gloves.
Eye protection	: Chemical goggles or safety glasses.
Respiratory protection	: Wear appropriate mask.
Other information	: Do not eat, drink or smoke during use.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	: Solid
Appearance	: Dark grey granules.
Color	: Dark Gray
Odor	: Odorless
Odor threshold	: No data available
pH	: No data available
Relative evaporation rate (butyl acetate=1)	: No data available
Melting point	: No data available
Freezing point	: No data available
Boiling point	: No data available
Flash point	: No data available
Auto-ignition temperature	: No data available
Decomposition temperature	: No data available
Flammability (solid, gas)	: No data available
Vapor pressure	: No data available
Relative vapor density at 20 °C	: No data available
Relative density	: No data available
Solubility	: Soluble. Water: Solubility in water of component(s) of the mixture : •: 77 g/100ml •: 38 g/100ml •: 11 g/100ml
Log Pow	: No data available
Log Kow	: No data available
Viscosity, kinematic	: No data available
Viscosity, dynamic	: No data available
Explosive properties	: No data available
Oxidizing properties	: No data available
Explosive limits	: No data available

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

No additional information available

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10.2. Chemical stability

Not established.

10.3. Possibility of hazardous reactions

Not established.

10.4. Conditions to avoid

Direct sunlight. Extremely high or low temperatures.

10.5. Incompatible materials

Strong acids. Strong bases.

10.6. Hazardous decomposition products

fume. Carbon monoxide. Carbon dioxide.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity : Not classified

ammonium sulfate (7783-20-2)	
LD50 oral rat	2840 mg/kg (Rat)
LD50 dermal rat	> 2000 mg/kg
ATE US (oral)	2840.00000000 mg/kg body weight

Monoammonium Phosphate (7722-76-1)	
LD50 oral rat	5750 mg/kg (Rat)
LD50 dermal rat	> mg/kg
LD50 dermal rabbit	> 7940 mg/kg (Rabbit)
ATE US (oral)	5750.00000000 mg/kg body weight

potassium sulfate (7778-80-5)	
LD50 oral rat	6600 mg/kg (Rat)
ATE US (oral)	6600.00000000 mg/kg body weight

Skin corrosion/irritation : Not classified
Serious eye damage/irritation : Causes eye irritation.
Respiratory or skin sensitization : Not classified
Germ cell mutagenicity : Not classified
Based on available data, the classification criteria are not met
Carcinogenicity : Not classified
Reproductive toxicity : Not classified
Based on available data, the classification criteria are not met
Specific target organ toxicity (single exposure) : May cause respiratory irritation.

Specific target organ toxicity (repeated exposure) : Not classified
Based on available data, the classification criteria are not met

Aspiration hazard : Not classified
Based on available data, the classification criteria are not met

Potential Adverse human health effects and symptoms : Based on available data, the classification criteria are not met.

SECTION 12: Ecological information

12.1. Toxicity

ammonium sulfate (7783-20-2)	
LC50 fish 1	126 mg/l (96 h; Poecilia reticulata)
EC50 Daphnia 1	202 mg/l (96 h; Daphnia magna)
LC50 fish 2	250 - 480 mg/l (96 h; Brachydanio rerio)
EC50 Daphnia 2	433 mg/l (50 h; Daphnia magna)

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ammonium sulfate (7783-20-2)	
TLM fish 1	1290 ppm (96 h; Gambusia affinis)
Monoammonium Phosphate (7722-76-1)	
LC50 fish 1	155 ppm (96 h; Pimephales promelas)
potassium sulfate (7778-80-5)	
LC50 fish 1	1692.4 mg/l (96 h; Alburnus alburnus)
LC50 other aquatic organisms 1	> 1000 mg/l (96 h)
EC50 Daphnia 1	890 mg/l (48 h; Daphnia magna; Static system)
LC50 fish 2	653 - 796 mg/l (96 h; Lepomis macrochirus)
EC50 Daphnia 2	1180 mg/l (96 h; Crustacea)
TLM fish 1	3550 ppm (96 h; Lepomis sp.)
Threshold limit other aquatic organisms 1	> 1000 mg/l (96 h)
Threshold limit algae 1	2900 mg/l (72 h; Scenedesmus subspicatus)

12.2. Persistence and degradability

Best 9 Iron Minis 9-9-9 + 9%Fe	
Persistence and degradability	Not established.

ammonium sulfate (7783-20-2)	
Persistence and degradability	Biodegradability in water: no data available. Not established.

Monoammonium Phosphate (7722-76-1)	
Persistence and degradability	Biodegradability in water: no data available. Not established.

potassium sulfate (7778-80-5)	
Persistence and degradability	Biodegradability: not applicable. Not established.
Biochemical oxygen demand (BOD)	Not applicable
Chemical oxygen demand (COD)	Not applicable
ThOD	Not applicable
BOD (% of ThOD)	Not applicable

Iron Oxysulfate	
Persistence and degradability	Not established.

Sand	
Persistence and degradability	Not established.

12.3. Bioaccumulative potential

Best 9 Iron Minis 9-9-9 + 9%Fe	
Bioaccumulative potential	Not established.

ammonium sulfate (7783-20-2)	
Log Pow	-5.1
Bioaccumulative potential	Bioaccumulation: not applicable. Not established.

Monoammonium Phosphate (7722-76-1)	
Bioaccumulative potential	Not bioaccumulative. Not established.

potassium sulfate (7778-80-5)	
Bioaccumulative potential	Not bioaccumulative. Not established.

Iron Oxysulfate	
Bioaccumulative potential	Not established.

Sand	
Bioaccumulative potential	Not established.

12.4. Mobility in soil

No additional information available

12.5. Other adverse effects

Effect on ozone layer : No additional information available

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Effect on the global warming : No known ecological damage caused by this product.

Other information : Avoid release to the environment.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Waste disposal recommendations : Dispose in a safe manner in accordance with local/national regulations.

Ecology - waste materials : Avoid release to the environment.

SECTION 14: Transport information

In accordance with DOT

Not regulated for transport

Additional information

Other information : No supplementary information available.

ADR

Transport document description :

Transport by sea

No additional information available

Air transport

No additional information available

SECTION 15: Regulatory information

15.1. US Federal regulations

All components of this product are listed on the Toxic Substances Control Act (TSCA) inventory except for:

Iron Oxysulfate	CAS No	C>=10.00% ; C<=20.00%
Sand	CAS No	C>=15.00% ; C<=20.00%

This product or mixture does not contain a toxic chemical or chemicals in excess of the applicable de minimis concentration as specified in 40 CFR §372.38(a) subject to the reporting requirements of section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372.

15.2. International regulations

CANADA

No additional information available

EU-Regulations

No additional information available

Classification according to Regulation (EC) No. 1272/2008 [CLP]

Classification according to Directive 67/548/EEC or 1999/45/EC

Not classified

15.2.2. National regulations

No additional information available

15.3. US State regulations

SECTION 16: Other information

Data sources : REGULATION (EC) No 1272/2008 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 16 December 2008 on classification, labeling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006.

Other information : None.

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Full text of H-phrases: see section 16:

Eye Irrit. 2B	Serious eye damage/eye irritation Category 2B
STOT SE 3	Specific target organ toxicity (single exposure) Category 3
H320	Causes eye irritation
H335	May cause respiratory irritation

SDS US (GHS HazCom 2012)

Disclaimer: This information relates to the specific material designated and may not be valid for such material used in combination with any other materials or in any process. Such information is to the best of our knowledge and belief, accurate and reliable as of the date compiled. However, no representation, warranty or guarantee is made as to its accuracy, reliability or completeness. NO WARRANTY OF MERCHANTABILITY, FITNESS FOR ANY PARTICULAR PURPOSE, OR ANY OTHER WARRANTY, EXPRESS OR IMPLIED, IS MADE CONCERNING THE INFORMATION HEREIN PROVIDED. It is the user's responsibility to satisfy himself as to the suitability and completeness of such information for his own particular use. We do not accept liability for any loss or damage that may occur from the use of this information nor do we offer warranty against patent infringement.



Best Super Turf 25-5-5 Contains Polyon and Turf Supreme

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Product form : Mixture
Product name : Best Super Turf 25-5-5 Contains Polyon and Turf Supreme
Product code : M74033

1.2. Relevant identified uses of the substance or mixture and uses advised against

1.3. Details of the supplier of the safety data sheet

JR Simplot Company
Boise, ID 83707
T 1-208-336-2110

1.4. Emergency telephone number

Emergency number : CHEMTREC 1-800-424-9300

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification (GHS-US)

Skin Irrit. 2 H315
Eye Irrit. 2B H320
STOT SE 3 H335

Full text of H-phrases: see section 16

2.2. Label elements

GHS-US labeling

Hazard pictograms (GHS-US) :



GHS07

Signal word (GHS-US) :

Warning

Hazard statements (GHS-US) :

H315 - Causes skin irritation
H320 - Causes eye irritation
H335 - May cause respiratory irritation

Precautionary statements (GHS-US) :

P261 - Avoid breathing dust/fume/gas/mist/vapors/spray
P264 - Wash ... thoroughly after handling
P271 - Use only outdoors or in a well-ventilated area
P280 - Wear protective gloves/protective clothing/eye protection/face protection
P302+P352 - If on skin: Wash with plenty of water/...
P304+P340 - If inhaled: Remove person to fresh air and keep comfortable for breathing
P305+P351+P338 - If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P312 - Call a poison center/doctor/... if you feel unwell
P321 - Specific treatment (see ... on this label)
P332+P313 - If skin irritation occurs: Get medical advice/attention
P337+P313 - If eye irritation persists: Get medical advice/attention
P362 - Take off contaminated clothing and wash before reuse
P403+P233 - Store in a well-ventilated place. Keep container tightly closed
P405 - Store locked up
P501 - Dispose of contents/container to ... specify in accordance with local/regional/national regulations

2.3. Other hazards

No additional information available

2.4. Unknown acute toxicity (GHS-US)

No data available

Best Super Turf 25-5-5 Contains Polyon and Turf Supreme

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SECTION 3: Composition/information on ingredients

3.1. Substance

Not applicable

3.2. Mixture

Name	Product identifier	%	Classification (GHS-US)
ammonium sulfate	(CAS No) 7783-20-2		Eye Irrit. 2B, H320 STOT SE 3, H335
urea	(CAS No) 57-13-6		Skin Irrit. 2, H315 Eye Irrit. 2B, H320 STOT SE 3, H335
Monoammonium Phosphate	(CAS No) 7722-76-1		Eye Irrit. 2B, H320 STOT SE 3, H335
potassium chloride	(CAS No) 7447-40-7		Not classified
Iron Oxysulfate			Eye Irrit. 2B, H320
Polymer Coating			Not classified
Sand			STOT SE 3, H335
Wax	(CAS No) 64771-72-8		Not classified
Manganese Oxysulfate			Eye Irrit. 2B, H320

SECTION 4: First aid measures

4.1. Description of first aid measures

- First-aid measures general : Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label where possible).
- First-aid measures after inhalation : Assure fresh air breathing. Allow the victim to rest.
- First-aid measures after skin contact : Remove affected clothing and wash all exposed skin area with mild soap and water, followed by warm water rinse.
- First-aid measures after eye contact : Rinse immediately with plenty of water. Obtain medical attention if pain, blinking or redness persist.
- First-aid measures after ingestion : Rinse mouth. Do NOT induce vomiting. Obtain emergency medical attention.

4.2. Most important symptoms and effects, both acute and delayed

- Symptoms/injuries : Not expected to present a significant hazard under anticipated conditions of normal use.

4.3. Indication of any immediate medical attention and special treatment needed

No additional information available

SECTION 5: Firefighting measures

5.1. Extinguishing media

- Suitable extinguishing media : Foam. Dry powder. Carbon dioxide. Water spray. Sand.
- Unsuitable extinguishing media : Do not use a heavy water stream.

5.2. Special hazards arising from the substance or mixture

No additional information available

5.3. Advice for firefighters

- Firefighting instructions : Use water spray or fog for cooling exposed containers. Exercise caution when fighting any chemical fire. Prevent fire-fighting water from entering environment.
- Protection during firefighting : Do not enter fire area without proper protective equipment, including respiratory protection.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

- Emergency procedures : Evacuate unnecessary personnel.

6.1.2. For emergency responders

- Protective equipment : Equip cleanup crew with proper protection.
- Emergency procedures : Ventilate area.

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Safety Data Sheet

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6.2. Environmental precautions

Prevent entry to sewers and public waters. Notify authorities if liquid enters sewers or public waters.

6.3. Methods and material for containment and cleaning up

Methods for cleaning up : On land, sweep or shovel into suitable containers. Minimize generation of dust. Store away from other materials.

6.4. Reference to other sections

See Heading 8. Exposure controls and personal protection.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling : Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Provide good ventilation in process area to prevent formation of vapor.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions : Keep only in the original container in a cool, well ventilated place away from : Keep container closed when not in use.

Incompatible products : Strong bases. Strong acids.

Incompatible materials : Sources of ignition. Direct sunlight.

7.3. Specific end use(s)

No additional information available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

No additional information available

8.2. Exposure controls

Personal protective equipment : Avoid all unnecessary exposure.

Hand protection : Wear protective gloves.

Eye protection : Chemical goggles or safety glasses.

Respiratory protection : Wear appropriate mask.

Other information : Do not eat, drink or smoke during use.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state : Solid

Appearance : Green and grey granules.

Color : Green; Gray

Odor : No data available on odour

Odor threshold : No data available

pH : No data available

Relative evaporation rate (butyl acetate=1) : No data available

Melting point : No data available

Freezing point : No data available

Boiling point : No data available

Flash point : No data available

Auto-ignition temperature : No data available

Decomposition temperature : No data available

Flammability (solid, gas) : No data available

Vapor pressure : No data available

Relative vapor density at 20 °C : No data available

Relative density : No data available

Solubility : Soluble and slowly soluble. Polymer coating insoluble.
Water: Solubility in water of component(s) of the mixture :
•: 100 g/100ml •: 77 g/100ml •: 38 g/100ml •: 34 g/100ml

Log Pow : No data available

Best Super Turf 25-5-5 Contains Polyon and Turf Supreme

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Log Kow	: No data available
Viscosity, kinematic	: No data available
Viscosity, dynamic	: No data available
Explosive properties	: No data available
Oxidizing properties	: No data available
Explosive limits	: No data available

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

No additional information available

10.2. Chemical stability

Stable. Not established.

10.3. Possibility of hazardous reactions

Not established.

10.4. Conditions to avoid

Extremely high temperatures. Direct sunlight. Extremely high or low temperatures.

10.5. Incompatible materials

Oxidizing agent. Prolonged contact may cause oxidation of unprotected metals. Strong acids. Strong bases.

10.6. Hazardous decomposition products

Extremely high temperatures. The product may reach melting point and decompose to release NH₃, SO_x, PO_x, or CN. fume. Carbon monoxide. Carbon dioxide.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity : Not classified

urea (57-13-6)	
LD50 oral rat	8471 mg/kg (Rat)
LD50 dermal rat	> 3200 mg/kg (Rat)
LD50 dermal rabbit	> 21000 mg/kg (Rabbit)
ATE US (oral)	8471.00000000 mg/kg body weight

ammonium sulfate (7783-20-2)	
LD50 oral rat	2840 mg/kg (Rat)
LD50 dermal rat	> 2000 mg/kg
ATE US (oral)	2840.00000000 mg/kg body weight

Monoammonium Phosphate (7722-76-1)	
LD50 oral rat	5750 mg/kg (Rat)
LD50 dermal rat	> mg/kg
LD50 dermal rabbit	> 7940 mg/kg (Rabbit)
ATE US (oral)	5750.00000000 mg/kg body weight

potassium chloride (7447-40-7)	
LD50 oral rat	2600 mg/kg (Rat)
ATE US (oral)	2600.00000000 mg/kg body weight

Manganese Oxysulfate	
LD50 oral rat	2150 mg/kg
ATE US (oral)	2150.00000000 mg/kg body weight

Skin corrosion/irritation	: Causes skin irritation.
Serious eye damage/irritation	: Causes eye irritation.
Respiratory or skin sensitization	: Not classified

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Germ cell mutagenicity	: Not classified Based on available data, the classification criteria are not met
Carcinogenicity	: Not classified
Reproductive toxicity	: Not classified Based on available data, the classification criteria are not met
Specific target organ toxicity (single exposure)	: May cause respiratory irritation.
Specific target organ toxicity (repeated exposure)	: Not classified Based on available data, the classification criteria are not met
Aspiration hazard	: Not classified Based on available data, the classification criteria are not met
Potential Adverse human health effects and symptoms	: Based on available data, the classification criteria are not met.

SECTION 12: Ecological information

12.1. Toxicity

urea (57-13-6)	
LC50 fish 1	> 6810 mg/l (96 h; <i>Leuciscus idus</i>)
EC50 Daphnia 1	> 10000 mg/l (48 h; <i>Daphnia magna</i>)
LC50 fish 2	17500 mg/l (96 h; <i>Poecilia reticulata</i>)
EC50 Daphnia 2	> 10000 mg/l (24 h; <i>Daphnia magna</i>)
TLM fish 1	17500 ppm (96 h; <i>Poecilia reticulata</i>)
Threshold limit other aquatic organisms 1	120000 mg/l (16 h; Bacteria; Toxicity test)
Threshold limit other aquatic organisms 2	> 10000 mg/l (<i>Pseudomonas putida</i>)
Threshold limit algae 2	> 10000 mg/l (168 h; <i>Scenedesmus quadricauda</i>)

ammonium sulfate (7783-20-2)	
LC50 fish 1	126 mg/l (96 h; <i>Poecilia reticulata</i>)
EC50 Daphnia 1	202 mg/l (96 h; <i>Daphnia magna</i>)
LC50 fish 2	250 - 480 mg/l (96 h; <i>Brachydanio rerio</i>)
EC50 Daphnia 2	433 mg/l (50 h; <i>Daphnia magna</i>)
TLM fish 1	1290 ppm (96 h; <i>Gambusia affinis</i>)

Monoammonium Phosphate (7722-76-1)	
LC50 fish 1	155 ppm (96 h; <i>Pimephales promelas</i>)

potassium chloride (7447-40-7)	
LC50 fish 1	920 mg/l (96 h; <i>Gambusia affinis</i> ; Static system)
EC50 Daphnia 1	630 mg/l (48 h; <i>Ceriodaphnia dubia</i>)
LC50 fish 2	2010 mg/l (96 h; <i>Lepomis macrochirus</i> ; Static system)
EC50 Daphnia 2	660 mg/l (48 h; <i>Daphnia magna</i>)
Threshold limit algae 1	850 mg/l (72 h; <i>Scenedesmus subspicatus</i>)
Threshold limit algae 2	> 100 mg/l (72 h; <i>Scenedesmus subspicatus</i> ; GLP)

12.2. Persistence and degradability

Best Super Turf 25-5-5 Contains Polyon and Turf Supreme	
Persistence and degradability	Not established.

urea (57-13-6)	
Persistence and degradability	Inherently biodegradable. Hydrolysis in water. Not established.
ThOD	0.27 g O ₂ /g substance

ammonium sulfate (7783-20-2)	
Persistence and degradability	Biodegradability in water: no data available. Not established.

Monoammonium Phosphate (7722-76-1)	
Persistence and degradability	Biodegradability in water: no data available. Not established.

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potassium chloride (7447-40-7)	
Persistence and degradability	Biodegradability: not applicable. Not established.
Biochemical oxygen demand (BOD)	Not applicable
Chemical oxygen demand (COD)	Not applicable
ThOD	Not applicable
BOD (% of ThOD)	Not applicable

Iron Oxysulfate	
Persistence and degradability	Not established.

Sand	
Persistence and degradability	Not established.

Wax (64771-72-8)	
Persistence and degradability	Not established.

12.3. Bioaccumulative potential

Best Super Turf 25-5-5 Contains Polyon and Turf Supreme	
Bioaccumulative potential	Not established.

urea (57-13-6)	
BCF fish 1	1 (72 h; Brachydanio rerio; Fresh water)
BCF other aquatic organisms 1	11700 (Chlorella sp.)
Log Pow	-2.59 - -1.59
Bioaccumulative potential	Bioaccumulation: not applicable. Not established.

ammonium sulfate (7783-20-2)	
Log Pow	-5.1
Bioaccumulative potential	Bioaccumulation: not applicable. Not established.

Monoammonium Phosphate (7722-76-1)	
Bioaccumulative potential	Not bioaccumulative. Not established.

potassium chloride (7447-40-7)	
Log Pow	-0.46 (Estimated value)
Bioaccumulative potential	Bioaccumulation: not applicable. Not established.

Iron Oxysulfate	
Bioaccumulative potential	Not established.

Sand	
Bioaccumulative potential	Not established.

Wax (64771-72-8)	
Bioaccumulative potential	Not established.

12.4. Mobility in soil

No additional information available

12.5. Other adverse effects

- Effect on ozone layer : No additional information available
- Effect on the global warming : No known ecological damage caused by this product.
- Other information : Avoid release to the environment.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

- Waste disposal recommendations : Dispose in a safe manner in accordance with local/national regulations.
- Ecology - waste materials : Avoid release to the environment.

SECTION 14: Transport information

- In accordance with DOT
- Not regulated for transport

Best Super Turf 25-5-5 Contains Polyon and Turf Supreme

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Additional information

Other information : No supplementary information available.

ADR

Transport document description :

Transport by sea

No additional information available

Air transport

No additional information available

SECTION 15: Regulatory information

15.1. US Federal regulations

Best Super Turf 25-5-5 Contains Polyon and Turf Supreme

Not listed on the United States TSCA (Toxic Substances Control Act) inventory

All components of this product are listed on the Toxic Substances Control Act (TSCA) inventory except for:

Component	CAS No
Iron Oxysulfate	CAS No
Manganese Oxysulfate	CAS No
Sand	CAS No
Polymer Coating	CAS No

This product or mixture does not contain a toxic chemical or chemicals in excess of the applicable de minimis concentration as specified in 40 CFR §372.38(a) subject to the reporting requirements of section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372.

Iron Oxysulfate

Not listed on the United States TSCA (Toxic Substances Control Act) inventory

Sand

Not listed on the United States TSCA (Toxic Substances Control Act) inventory

15.2. International regulations

CANADA

No additional information available

EU-Regulations

No additional information available

Classification according to Regulation (EC) No. 1272/2008 [CLP]

Classification according to Directive 67/548/EEC or 1999/45/EC

Not classified

15.2.2. National regulations

No additional information available

15.3. US State regulations

California Proposition 65 - This product does not contain any substances known to the state of California to cause cancer and/or reproductive harm

SECTION 16: Other information

Data sources :

REGULATION (EC) No 1272/2008 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 16 December 2008 on classification, labeling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006.

Other information :

None.

Full text of H-phrases: see section 16:

Eye Irrit. 2B

Serious eye damage/eye irritation Category 2B

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Skin Irrit. 2	Skin corrosion/irritation Category 2
STOT SE 3	Specific target organ toxicity (single exposure) Category 3
H315	Causes skin irritation
H320	Causes eye irritation
H335	May cause respiratory irritation

SDS US (GHS HazCom 2012)

Disclaimer: This information relates to the specific material designated and may not be valid for such material used in combination with any other materials or in any process. Such information is to the best of our knowledge and belief, accurate and reliable as of the date compiled. However, no representation, warranty or guarantee is made as to its accuracy, reliability or completeness. NO WARRANTY OF MERCHANTABILITY, FITNESS FOR ANY PARTICULAR PURPOSE, OR ANY OTHER WARRANTY, EXPRESS OR IMPLIED, IS MADE CONCERNING THE INFORMATION HEREIN PROVIDED. It is the user's responsibility to satisfy himself as to the suitability and completeness of such information for his own particular use. We do not accept liability for any loss or damage that may occur from the use of this information nor do we offer warranty against patent infringement.

Superthrive® - Safety Data Sheet

Section 1: Identification

Product Identifier: Superthrive®

Recommended Use: Superthrive is a concentrated non-toxic solution for plants to be mixed with water and used expressly for horticultural and agricultural purposes.

Manufacturer: Vitamin Institute
12610 Saticoy Street South, North Hollywood, CA 91605
1 (818) 764-1523
info@superthrive.com

Emergency Phone (800) 441-8482

Section 2: Hazard(s) Identification

Classification of Mixture

Skin Irritation	Category 2
Eye Irritation	Category 2B

Label Elements including precautionary statements

Signal Word: WARNING!
Symbol Name: Exclamation Mark
Hazard Statement: Causes Skin and Eye Irritation

Precautionary Statements - General

Keep out of reach of children

Precautionary Statements - Prevention

Wash hands thoroughly after handling.
Wear protective gloves

Precautionary Statements - Response

SKIN IF ON SKIN: Wash with plenty of water
If skin irritation occurs: Get medical advice/attention.
Take off contaminated clothing and wash it before reuse.

EYES IF IN EYES: Rinse cautiously with water for several minutes.
Remove contact lenses, if present and easy to do.
Continue rinsing.
If eye irritation persists: Get medical attention/advice.

Precautionary Statements - Storage

none

Precautionary Statements - Disposal

none

Other Hazards not applicable

Section 3: Composition/Information on Ingredients

Reportable Hazardous Substances

Name	CAS #	Concentration
Isopropyl Alcohol	67-63-0	1.80%
Acetic Acid	64-19-7	2.00%

Section 4: First-Aid Measures

First Aid Measures

Skin Contact Wash with plenty of water
Eye Contact Rinse cautiously with water for several minutes.
Remove contact lenses if present and easy to do.
Ingestion: Drink fluids to flush. DO NOT INDUCE VOMITING.
Inhalation: N/A

If any irritation persists, seek medical attention.

Most Important Symptoms

Skin Contact After skin contact, a skin irritation may occur (redness).
Eye Contact After eye contact, an eye irritation may occur (redness).

Indication of any immediate medical attention and special treatment needed

Notes to Physician Treat Symptomatically

Section 5: Fire-fighting Measures

Extinguishing Media: Appropriate: CO₂, dry chemical, or foam. Water can be used to cool and protect exposed material.
Inappropriate: not determined

Special Fire Fighting Procedures: N/A

Unusual Fire and Explosion

Hazards: N/A

Section 6: Accidental Release Measures

Personal precautions, protective equipment and emergency procedures Wash hands thoroughly after handling.
Wear eye protection and protective gloves if necessary.

Environmental Precautions Dilute with water and wash off pavement. Allow to drain into soil.

Methods and Materials for containment and clean up Pick up free liquid and keep in suitable, closed containers for recycle and/or disposal. Residual liquid can be absorbed on inert material.

Section 7: Handling and Storage

Precautions for Safe Handling: Handle Carefully.
Wash your hands thoroughly after handling.
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do - continue rinsing.
If ON SKIN: Wash with plenty of soap and water.
Take off contaminated clothing and wash before reuse.

Conditions for Safe Storage Store in the original container away from sunlight.

Section 8: Exposure Controls / Personal Protection**Control Parameters****Exposure Guidelines**

Component	PEL
Isopropyl Alcohol	980 mg/m ³
Acetic Acid	25 mg/m ³

Appropriate Engineering Controls

N/A

Individual Protective Measures

Eye/Face Protection:	None required for consumer use. If splashes are likely to occur: Use safety glasses.
Skin/Body Protection:	Wear suitable clothing. Gloves may be worn by those with sensitive skin.
Respiratory:	Not Applicable
Hygiene:	Do not eat, drink or smoke when using this product. Wash thoroughly after handling. Avoid contact with eyes, skin and clothing. Wash contaminated clothes before reuse.

Section 9: Physical and Chemical Properties

Appearance:	Initial Boiling Point & Boiling Range - Not Available
Physical State - liquid	Upper/Lower flammability or explosive limits - Not Applicable
Color - amber	Vapor Pressure - Not Available
Odor - earthy	Vapor Density - Not Available
Odor Threshold: Not Applicable	Relative density - Not Available
pH - 3.0	Solubility - water soluble
Melting point / Freezing Point - Not Available	Partition coefficient: n-octanol/water - Not Available
Flammability - Non Flammable	Auto-ignition temperature - Not Available
Flash Point - Not Applicable	Decomposition Temperature - Not Available
Evaporation Rate - Not Available	Viscosity - Not Available

Section 10: Stability and Reactivity

Chemical Stability - Stable
 Possibility of Hazardous Reactions - None
 Conditions to Avoid - None Known
 Incompatible Materials - None Known
 Hazardous Decomposition Products - None

Section 11: Toxicology Information**Information on Toxicological Effects**

Acute Toxicity	<u>Isopropyl Alcohol:</u> LD50 (rat, oral) = 5045 mg/Kg LC50 (rat, inhalation), 8 h = 16000 LD50 (skin, rabbit) = 12800 mg/Kg	<u>Acetic Acid :</u> LD50 (rat, oral) = 3310 mg/Kg LDLo (rat, inhalation), 4 h = 16000 LD50 (skin, rabbit) = 1060 uL/Kg
Skin corrosion/irritation	Irritant for skin.	
Serious eye damage/irritation	Irritant for the eyes.	
Sensitization	Not available	
STOT-repeated exposure	Not available	
Germ cell mutagenicity	Not available	
Carcinogenicity	Not available	
Reproductive toxicity	Not available	
STOT-single exposure	Not available	
Aspiration hazard	Not available	

Section 12: Ecological information

Toxicity	LC50 > 750 mg/L = Non Hazardous
Persistence and degradability	Not available
Bioaccumulation potential	Not available
Mobility in the soil	Not available
Other Adverse Effects	Not available

Section 13: Disposal considerations

Waste Treatment Methods Waste residues are biodegradable and safe for soils.
Dilute with water to discard.

Container Handling and Disposal: Rinse containers with water and recycle.

Section 14: Transport Information

UN Number	Not Regulated
UN Proper Shipping Name	Not Regulated
Transport Hazard class	Not Regulated
Environmental Hazards	Not Regulated
Marine Pollutant	No
Special Precautions	None
Transport in Bulk (according to Annex II of MARPOL 73/78 and the IBC Code) - Not Applicable	

Section 15: Regulatory Information

None

Section 16: Other Information, including date of preparation or last revision

Created: May 27, 2015

NOTICE FROM VITAMIN INSTITUTE

The Vitamin Institute believes the information contained herein to be accurate and to represent the best information currently available to us. Vitamin Institute makes no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. It is the responsibility of the customer to follow label directions and make his or her own determination on each particular application.

Rev 5/27/2015

Triple Superphosphate 0-45-0

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SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Product form : Mixture
Product name : Triple Superphosphate 0-45-0
Product code : M12030

1.2. Relevant identified uses of the substance or mixture and uses advised against

1.3. Details of the supplier of the safety data sheet

JR Simplot Company
P.O. Box 70013
Boise, ID 83707
T 1-208-336-2110

1.4. Emergency telephone number

Emergency number : CHEMTREC 1-800-424-9300

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification (GHS-US)

Skin Irrit. 2 H315
Eye Irrit. 2B H320
STOT SE 3 H335

Full text of H-phrases: see section 16

2.2. Label elements

GHS-US labeling

Hazard pictograms (GHS-US) :



GHS07

Signal word (GHS-US) :

Warning

Hazard statements (GHS-US) :

H315 - Causes skin irritation
H320 - Causes eye irritation
H335 - May cause respiratory irritation

Precautionary statements (GHS-US) :

P261 - Avoid breathing dust/fume/gas/mist/vapors/spray
P264 - Wash ... thoroughly after handling
P271 - Use only outdoors or in a well-ventilated area
P280 - Wear protective gloves/protective clothing/eye protection/face protection
P302+P352 - If on skin: Wash with plenty of water/...
P304+P340 - If inhaled: Remove person to fresh air and keep comfortable for breathing
P305+P351+P338 - If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P312 - Call a poison center/doctor/... if you feel unwell
P321 - Specific treatment (see ... on this label)
P332+P313 - If skin irritation occurs: Get medical advice/attention
P337+P313 - If eye irritation persists: Get medical advice/attention
P362 - Take off contaminated clothing and wash before reuse
P403+P233 - Store in a well-ventilated place. Keep container tightly closed
P405 - Store locked up
P501 - Dispose of contents/container to ...

2.3. Other hazards

No additional information available

2.4. Unknown acute toxicity (GHS-US)

Not applicable

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SECTION 3: Composition/information on ingredients

3.1. Substance

Not applicable

3.2. Mixture

Name	Product identifier	%	Classification (GHS-US)
Calcium Phosphate	(CAS No) 7758-23-8	84 - 88	Skin Irrit. 2, H315 Eye Irrit. 2B, H320 STOT SE 3, H335
Dicalcium Phosphate	(CAS No) 7757-93-9	12 - 16	Eye Irrit. 2B, H320

Full text of H-phrases: see section 16

SECTION 4: First aid measures

4.1. Description of first aid measures

- First-aid measures general : Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label where possible).
- First-aid measures after inhalation : Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or doctor/physician if you feel unwell.
- First-aid measures after skin contact : Wash with plenty of soap and water. Wash contaminated clothing before reuse. If skin irritation occurs: Get medical advice/attention. Specific treatment (see ... on this label).
- First-aid measures after eye contact : IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
- First-aid measures after ingestion : Rinse mouth. Do NOT induce vomiting. Obtain emergency medical attention.

4.2. Most important symptoms and effects, both acute and delayed

- Symptoms/injuries after inhalation : May cause respiratory irritation.
- Symptoms/injuries after skin contact : Causes skin irritation.
- Symptoms/injuries after eye contact : Causes eye irritation.

4.3. Indication of any immediate medical attention and special treatment needed

No additional information available

SECTION 5: Firefighting measures

5.1. Extinguishing media

- Suitable extinguishing media : Foam. Dry powder. Carbon dioxide. Water spray. Sand.
- Unsuitable extinguishing media : Do not use a heavy water stream.

5.2. Special hazards arising from the substance or mixture

- Reactivity : Stable.

5.3. Advice for firefighters

- Firefighting instructions : Use water spray or fog for cooling exposed containers. Exercise caution when fighting any chemical fire. Prevent fire-fighting water from entering environment.
- Protection during firefighting : Do not enter fire area without proper protective equipment, including respiratory protection.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

- Emergency procedures : Evacuate unnecessary personnel.

6.1.2. For emergency responders

- Protective equipment : Equip cleanup crew with proper protection.
- Emergency procedures : Ventilate area.

6.2. Environmental precautions

Prevent entry to sewers and public waters. Notify authorities if liquid enters sewers or public waters.

6.3. Methods and material for containment and cleaning up

- Methods for cleaning up : On land, sweep or shovel into suitable containers. Minimize generation of dust. Store away from other materials.

6.4. Reference to other sections

See Heading 8. Exposure controls and personal protection.

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SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling : Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Provide good ventilation in process area to prevent formation of vapor. Avoid breathing dust/fume/gas/mist/vapors/spray. Use only outdoors or in a well-ventilated area.

Hygiene measures : Wash ... thoroughly after handling.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions : Keep only in the original container in a cool, well ventilated place away from : Keep container tightly closed.

Incompatible products : Strong bases. Strong acids.

Incompatible materials : Sources of ignition. Direct sunlight.

7.3. Specific end use(s)

No additional information available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Triple Superphosphate 0-45-0	
ACGIH	Not applicable
OSHA	Not applicable
Calcium Phosphate (7758-23-8)	
ACGIH	Not applicable
OSHA	Not applicable
Dicalcium Phosphate (7757-93-9)	
ACGIH	Not applicable
OSHA	Not applicable

8.2. Exposure controls

Personal protective equipment : Avoid all unnecessary exposure.

Hand protection : Wear protective gloves.

Eye protection : Chemical goggles or safety glasses.

Skin and body protection : Wear suitable protective clothing.

Respiratory protection : Wear appropriate mask.

Other information : Do not eat, drink or smoke during use.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state : Solid

Appearance : Granules.

Color : Off-white

Odor : characteristic

Odor threshold : No data available

pH : No data available

pH solution : 1 g to 10 g H₂O: 2.3-3

Melting point : No data available

Freezing point : No data available

Boiling point : No data available

Flash point : No data available

Relative evaporation rate (butyl acetate=1) : No data available

Flammability (solid, gas) : Non-flammable

Explosion limits : No data available

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Explosive properties	: No data available
Oxidizing properties	: No data available
Vapor pressure	: No data available
Relative density	: No data available
Relative vapor density at 20 °C	: No data available
Solubility	: Soluble. Water: Solubility in water of component(s) of the mixture : • : 1.8 g/100ml • : 0.010 g/100ml
Log Pow	: No data available
Log Kow	: No data available
Auto-ignition temperature	: No data available
Decomposition temperature	: No data available
Viscosity	: No data available
Viscosity, kinematic	: No data available
Viscosity, dynamic	: No data available

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

Stable.

10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

Not established.

10.4. Conditions to avoid

Direct sunlight. Extremely high or low temperatures.

10.5. Incompatible materials

Oxidizers. May be corrosive to metals. Strong acids. Strong bases.

10.6. Hazardous decomposition products

NH₃, CN, SO_x, PO_x, fume. Carbon monoxide. Carbon dioxide.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity : Not classified

Triple Superphosphate 0-45-0	
LD50 oral rat	17500 mg/kg
LD50 dermal rabbit	> 2000 mg/kg
ATE US (oral)	17500.000 mg/kg body weight
Calcium Phosphate (7758-23-8)	
LD50 oral rat	17500 mg/kg (Rat; Literature)
LD50 dermal rabbit	> 2000 mg/kg (Rabbit; Literature)
ATE US (oral)	17500.000 mg/kg body weight
Dicalcium Phosphate (7757-93-9)	
LD50 oral rat	10000 mg/kg (Rat)
LD50 dermal rat	7940 mg/kg (Rat)
ATE US (oral)	10000.000 mg/kg body weight
ATE US (dermal)	7940.000 mg/kg body weight

Skin corrosion/irritation	: Causes skin irritation.
Serious eye damage/irritation	: Causes eye irritation.
Respiratory or skin sensitization	: Not classified
Germ cell mutagenicity	: Not classified

Triple Superphosphate 0-45-0

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Carcinogenicity	: Not classified
Reproductive toxicity	: Not classified
Specific target organ toxicity (single exposure)	: May cause respiratory irritation.
Specific target organ toxicity (repeated exposure)	: Not classified
Aspiration hazard	: Not classified
Potential Adverse human health effects and symptoms	: Based on available data, the classification criteria are not met.
Symptoms/injuries after inhalation	: May cause respiratory irritation.
Symptoms/injuries after skin contact	: Causes skin irritation.
Symptoms/injuries after eye contact	: Causes eye irritation.

SECTION 12: Ecological information

12.1. Toxicity

No additional information available

12.2. Persistence and degradability

Triple Superphosphate 0-45-0	
Persistence and degradability	Not established.

Calcium Phosphate (7758-23-8)	
Persistence and degradability	Biodegradability: not applicable. Not established.
Biochemical oxygen demand (BOD)	Not applicable
Chemical oxygen demand (COD)	Not applicable
ThOD	Not applicable
BOD (% of ThOD)	Not applicable

Dicalcium Phosphate (7757-93-9)	
Persistence and degradability	Biodegradability: not applicable. Not established.
Biochemical oxygen demand (BOD)	Not applicable
Chemical oxygen demand (COD)	Not applicable
ThOD	Not applicable
BOD (% of ThOD)	Not applicable

12.3. Bioaccumulative potential

Triple Superphosphate 0-45-0	
Bioaccumulative potential	Not established.

Calcium Phosphate (7758-23-8)	
Bioaccumulative potential	No bioaccumulation data available. Not established.

Dicalcium Phosphate (7757-93-9)	
Bioaccumulative potential	Not bioaccumulative. Not established.

12.4. Mobility in soil

No additional information available

12.5. Other adverse effects

Effect on the global warming	: No known ecological damage caused by this product.
Other information	: Avoid release to the environment.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Waste disposal recommendations	: Dispose in a safe manner in accordance with local/national regulations.
--------------------------------	---

Triple Superphosphate 0-45-0

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Ecology - waste materials : Avoid release to the environment.

SECTION 14: Transport information

Department of Transportation (DOT)

In accordance with DOT

Not regulated for transport

Additional information

Other information : No supplementary information available.

ADR

No additional information available

Transport by sea

No additional information available

Air transport

No additional information available

SECTION 15: Regulatory information

15.1. US Federal regulations

Triple Superphosphate 0-45-0

Not listed on the United States TSCA (Toxic Substances Control Act) inventory

All components of this product are listed, or excluded from listing, on the United States Environmental Protection Agency Toxic Substances Control Act (TSCA) inventory

This product or mixture does not contain a toxic chemical or chemicals in excess of the applicable de minimis concentration as specified in 40 CFR §372.38(a) subject to the reporting requirements of section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372.

15.2. International regulations

CANADA

No additional information available

EU-Regulations

No additional information available

Classification according to Regulation (EC) No. 1272/2008 [CLP]

No additional information available

Classification according to Directive 67/548/EEC [DSD] or 1999/45/EC [DPD]

Not classified

National regulations

No additional information available

15.3. US State regulations

California Proposition 65 - This product does not contain any substances known to the state of California to cause cancer and/or reproductive harm

SECTION 16: Other information

Other information : None.

Full text of H-phrases:

Eye Irrit. 2B	Serious eye damage/eye irritation Category 2B
Skin Irrit. 2	Skin corrosion/irritation Category 2
STOT SE 3	Specific target organ toxicity (single exposure) Category 3
H315	Causes skin irritation
H320	Causes eye irritation
H335	May cause respiratory irritation

Triple Superphosphate 0-45-0

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SDS US (GHS HazCom 2012)

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Triple Twelve 12-12-12

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Product form : Mixture
Product name : Triple Twelve 12-12-12
Product code : M74039

1.2. Relevant identified uses of the substance or mixture and uses advised against

1.3. Details of the supplier of the safety data sheet

JR Simplot Company
Boise, ID 83707
T 1-208-336-2110

1.4. Emergency telephone number

Emergency number : CHEMTREC 1-800-424-9300

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification (GHS-US)

Eye Irrit. 2B H320
STOT SE 3 H335

Full text of H-phrases: see section 16

2.2. Label elements

GHS-US labeling

Hazard pictograms (GHS-US) :



GHS07

Signal word (GHS-US) : Warning
Hazard statements (GHS-US) : H320 - Causes eye irritation
H335 - May cause respiratory irritation
Precautionary statements (GHS-US) : P261 - Avoid breathing dust/fume/gas/mist/vapors/spray
P264 - Wash ... thoroughly after handling
P271 - Use only outdoors or in a well-ventilated area
P304+P340 - If inhaled: Remove person to fresh air and keep comfortable for breathing
P305+P351+P338 - If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P312 - Call a poison center/doctor/... if you feel unwell
P337+P313 - If eye irritation persists: Get medical advice/attention
P403+P233 - Store in a well-ventilated place. Keep container tightly closed
P405 - Store locked up
P501 - Dispose of contents/container to ... specify in accordance with local/regional/national regulations

2.3. Other hazards

No additional information available

2.4. Unknown acute toxicity (GHS-US)

No data available

SECTION 3: Composition/information on ingredients

3.1. Substance

Not applicable

3.2. Mixture

Triple Twelve 12-12-12

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Name	Product identifier	%	Classification (GHS-US)
ammonium sulfate	(CAS No) 7783-20-2		Eye Irrit. 2B, H320 STOT SE 3, H335
Monoammonium Phosphate	(CAS No) 7722-76-1		Eye Irrit. 2B, H320 STOT SE 3, H335
potassium sulfate	(CAS No) 7778-80-5		Not classified

SECTION 4: First aid measures

4.1. Description of first aid measures

- First-aid measures general : Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label where possible).
- First-aid measures after inhalation : Assure fresh air breathing. Allow the victim to rest.
- First-aid measures after skin contact : Remove affected clothing and wash all exposed skin area with mild soap and water, followed by warm water rinse.
- First-aid measures after eye contact : Rinse immediately with plenty of water. Obtain medical attention if pain, blinking or redness persist.
- First-aid measures after ingestion : Rinse mouth. Do NOT induce vomiting. Obtain emergency medical attention.

4.2. Most important symptoms and effects, both acute and delayed

- Symptoms/injuries : Not expected to present a significant hazard under anticipated conditions of normal use.

4.3. Indication of any immediate medical attention and special treatment needed

No additional information available

SECTION 5: Firefighting measures

5.1. Extinguishing media

- Suitable extinguishing media : Foam. Dry powder. Carbon dioxide. Water spray. Sand.
- Unsuitable extinguishing media : Do not use a heavy water stream.

5.2. Special hazards arising from the substance or mixture

No additional information available

5.3. Advice for firefighters

- Firefighting instructions : Use water spray or fog for cooling exposed containers. Exercise caution when fighting any chemical fire. Prevent fire-fighting water from entering environment.
- Protection during firefighting : Do not enter fire area without proper protective equipment, including respiratory protection.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

- Emergency procedures : Evacuate unnecessary personnel.

6.1.2. For emergency responders

- Protective equipment : Equip cleanup crew with proper protection.
- Emergency procedures : Ventilate area.

6.2. Environmental precautions

Prevent entry to sewers and public waters. Notify authorities if liquid enters sewers or public waters.

6.3. Methods and material for containment and cleaning up

- Methods for cleaning up : On land, sweep or shovel into suitable containers. Minimize generation of dust. Store away from other materials.

6.4. Reference to other sections

See Heading 8. Exposure controls and personal protection.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

- Precautions for safe handling : Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Provide good ventilation in process area to prevent formation of vapor.

Triple Twelve 12-12-12

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions : Keep only in the original container in a cool, well ventilated place away from : Keep container closed when not in use.

Incompatible products : Strong bases. Strong acids.

Incompatible materials : Sources of ignition. Direct sunlight.

7.3. Specific end use(s)

No additional information available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

No additional information available

8.2. Exposure controls

Personal protective equipment : Avoid all unnecessary exposure.

Hand protection : Wear protective gloves.

Eye protection : Chemical goggles or safety glasses.

Respiratory protection : Wear appropriate mask.

Other information : Do not eat, drink or smoke during use.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state : Solid

Appearance : Solid granules.

Color : Gray

Odor : No data available on odour

Odor threshold : No data available

pH : No data available

Relative evaporation rate (butyl acetate=1) : No data available

Melting point : No data available

Freezing point : No data available

Boiling point : No data available

Flash point : Non-flammable

Auto-ignition temperature : No data available

Decomposition temperature : No data available

Flammability (solid, gas) : No data available

Vapor pressure : No data available

Relative vapor density at 20 °C : No data available

Relative density : No data available

Density : 63 lbs/ft³

Solubility : Water: Solubility in water of component(s) of the mixture :
•: 77 g/100ml •: 38 g/100ml •: 11 g/100ml

Log Pow : No data available

Log Kow : No data available

Viscosity, kinematic : No data available

Viscosity, dynamic : No data available

Explosive properties : No data available

Oxidizing properties : No data available

Explosive limits : No data available

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

No additional information available

Triple Twelve 12-12-12

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

10.2. Chemical stability

Stable. Not established.

10.3. Possibility of hazardous reactions

Not established.

10.4. Conditions to avoid

Extremely high temperatures. Direct sunlight. Extremely high or low temperatures.

10.5. Incompatible materials

Oxidizing agent. Prolonged contact may cause oxidation of unprotected metals. Strong acids. Strong bases.

10.6. Hazardous decomposition products

Extremely high temperatures. The product may reach melting point and decompose to release NH₃, SO_x, PO_x, or CN. fume. Carbon monoxide. Carbon dioxide.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity : Not classified

ammonium sulfate (7783-20-2)	
LD50 oral rat	2840 mg/kg (Rat)
LD50 dermal rat	> 2000 mg/kg
ATE US (oral)	2840.00000000 mg/kg body weight

Monoammonium Phosphate (7722-76-1)	
LD50 oral rat	5750 mg/kg (Rat)
LD50 dermal rat	> mg/kg
LD50 dermal rabbit	> 7940 mg/kg (Rabbit)
ATE US (oral)	5750.00000000 mg/kg body weight

potassium sulfate (7778-80-5)	
LD50 oral rat	6600 mg/kg (Rat)
ATE US (oral)	6600.00000000 mg/kg body weight

Skin corrosion/irritation : Not classified
Serious eye damage/irritation : Causes eye irritation.
Respiratory or skin sensitization : Not classified
Germ cell mutagenicity : Not classified
Based on available data, the classification criteria are not met
Carcinogenicity : Not classified
Reproductive toxicity : Not classified
Based on available data, the classification criteria are not met
Specific target organ toxicity (single exposure) : May cause respiratory irritation.

Specific target organ toxicity (repeated exposure) : Not classified
Based on available data, the classification criteria are not met

Aspiration hazard : Not classified
Based on available data, the classification criteria are not met

Potential Adverse human health effects and symptoms : Based on available data, the classification criteria are not met.

SECTION 12: Ecological information

12.1. Toxicity

ammonium sulfate (7783-20-2)	
LC50 fish 1	126 mg/l (96 h; Poecilia reticulata)
EC50 Daphnia 1	202 mg/l (96 h; Daphnia magna)
LC50 fish 2	250 - 480 mg/l (96 h; Brachydanio rerio)

Triple Twelve 12-12-12

Safety Data Sheet

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ammonium sulfate (7783-20-2)	
EC50 Daphnia 2	433 mg/l (50 h; Daphnia magna)
TLM fish 1	1290 ppm (96 h; Gambusia affinis)
Monoammonium Phosphate (7722-76-1)	
LC50 fish 1	155 ppm (96 h; Pimephales promelas)
potassium sulfate (7778-80-5)	
LC50 fish 1	1692.4 mg/l (96 h; Alburnus alburnus)
LC50 other aquatic organisms 1	> 1000 mg/l (96 h)
EC50 Daphnia 1	890 mg/l (48 h; Daphnia magna; Static system)
LC50 fish 2	653 - 796 mg/l (96 h; Lepomis macrochirus)
EC50 Daphnia 2	1180 mg/l (96 h; Crustacea)
TLM fish 1	3550 ppm (96 h; Lepomis sp.)
Threshold limit other aquatic organisms 1	> 1000 mg/l (96 h)
Threshold limit algae 1	2900 mg/l (72 h; Scenedesmus subspicatus)

12.2. Persistence and degradability

Triple Twelve 12-12-12	
Persistence and degradability	Not established.

ammonium sulfate (7783-20-2)	
Persistence and degradability	Biodegradability in water: no data available. Not established.

Monoammonium Phosphate (7722-76-1)	
Persistence and degradability	Biodegradability in water: no data available. Not established.

potassium sulfate (7778-80-5)	
Persistence and degradability	Biodegradability: not applicable. Not established.
Biochemical oxygen demand (BOD)	Not applicable
Chemical oxygen demand (COD)	Not applicable
ThOD	Not applicable
BOD (% of ThOD)	Not applicable

12.3. Bioaccumulative potential

Triple Twelve 12-12-12	
Bioaccumulative potential	Not established.

ammonium sulfate (7783-20-2)	
Log Pow	-5.1
Bioaccumulative potential	Bioaccumulation: not applicable. Not established.

Monoammonium Phosphate (7722-76-1)	
Bioaccumulative potential	Not bioaccumulative. Not established.

potassium sulfate (7778-80-5)	
Bioaccumulative potential	Not bioaccumulative. Not established.

12.4. Mobility in soil

No additional information available

12.5. Other adverse effects

- Effect on ozone layer : No additional information available
- Effect on the global warming : No known ecological damage caused by this product.
- Other information : Avoid release to the environment.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

- Waste disposal recommendations : Dispose in a safe manner in accordance with local/national regulations.
- Ecology - waste materials : Avoid release to the environment.

Triple Twelve 12-12-12

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

SECTION 14: Transport information

In accordance with DOT

Not regulated for transport

Additional information

Other information : No supplementary information available.

ADR

Transport document description :

Transport by sea

No additional information available

Air transport

No additional information available

SECTION 15: Regulatory information

15.1. US Federal regulations

Triple Twelve 12-12-12

Not listed on the United States TSCA (Toxic Substances Control Act) inventory

All components of this product are listed on the Toxic Substances Control Act (TSCA) inventory

This product or mixture does not contain a toxic chemical or chemicals in excess of the applicable de minimis concentration as specified in 40 CFR §372.38(a) subject to the reporting requirements of section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372.

15.2. International regulations

CANADA

No additional information available

EU-Regulations

No additional information available

Classification according to Regulation (EC) No. 1272/2008 [CLP]

Classification according to Directive 67/548/EEC or 1999/45/EC

Not classified

15.2.2. National regulations

No additional information available

15.3. US State regulations

California Proposition 65 - This product does not contain any substances known to the state of California to cause cancer and/or reproductive harm

SECTION 16: Other information

Data sources :
REGULATION (EC) No 1272/2008 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 16 December 2008 on classification, labeling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006.

Other information : None.

Full text of H-phrases: see section 16:

Eye Irrit. 2B	Serious eye damage/eye irritation Category 2B
STOT SE 3	Specific target organ toxicity (single exposure) Category 3
H320	Causes eye irritation
H335	May cause respiratory irritation

SDS US (GHS HazCom 2012)

Triple Twelve 12-12-12

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

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Best Turf Gold 22-5-6 contains X-cote

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Product form : Mixture
Product name : Best Turf Gold 22-5-6 contains X-cote
Product code : M74034

1.2. Relevant identified uses of the substance or mixture and uses advised against

1.3. Details of the supplier of the safety data sheet

JR Simplot Company
Boise, ID 83707
T 1-208-336-2110

1.4. Emergency telephone number

Emergency number : CHEMTREC 1-800-424-9300

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification (GHS-US)

Skin Irrit. 2 H315
Eye Irrit. 2B H320
STOT SE 3 H335

Full text of H-phrases: see section 16

2.2. Label elements

GHS-US labeling

Hazard pictograms (GHS-US) :



GHS07

Signal word (GHS-US) :

Warning

Hazard statements (GHS-US) :

H315 - Causes skin irritation
H320 - Causes eye irritation
H335 - May cause respiratory irritation

Precautionary statements (GHS-US) :

P261 - Avoid breathing dust/fume/gas/mist/vapors/spray
P264 - Wash ... thoroughly after handling
P271 - Use only outdoors or in a well-ventilated area
P280 - Wear protective gloves/protective clothing/eye protection/face protection
P302+P352 - If on skin: Wash with plenty of water/...
P304+P340 - If inhaled: Remove person to fresh air and keep comfortable for breathing
P305+P351+P338 - If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P312 - Call a poison center/doctor/... if you feel unwell
P321 - Specific treatment (see ... on this label)
P332+P313 - If skin irritation occurs: Get medical advice/attention
P337+P313 - If eye irritation persists: Get medical advice/attention
P362 - Take off contaminated clothing and wash before reuse
P403+P233 - Store in a well-ventilated place. Keep container tightly closed
P405 - Store locked up
P501 - Dispose of contents/container to ... specify in accordance with local/regional/national regulations

2.3. Other hazards

No additional information available

2.4. Unknown acute toxicity (GHS-US)

No data available

Best Turf Gold 22-5-6 contains X-cote

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

SECTION 3: Composition/information on ingredients

3.1. Substance

Not applicable

3.2. Mixture

Name	Product identifier	%	Classification (GHS-US)
ammonium sulfate	(CAS No) 7783-20-2		Eye Irrit. 2B, H320 STOT SE 3, H335
urea	(CAS No) 57-13-6		Skin Irrit. 2, H315 Eye Irrit. 2B, H320 STOT SE 3, H335
Monoammonium Phosphate	(CAS No) 7722-76-1		Eye Irrit. 2B, H320 STOT SE 3, H335
potassium chloride	(CAS No) 7447-40-7		Not classified
Polymer Coating			Not classified
Iron Oxysulfate			Eye Irrit. 2B, H320
Sand			STOT SE 3, H335
sulfur	(CAS No) 7704-34-9		Skin Irrit. 2, H315 Eye Irrit. 2B, H320
Wax	(CAS No) 64771-72-8		Not classified
Manganese Oxysulfate			Eye Irrit. 2B, H320

SECTION 4: First aid measures

4.1. Description of first aid measures

- First-aid measures general : Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label where possible).
- First-aid measures after inhalation : Assure fresh air breathing. Allow the victim to rest.
- First-aid measures after skin contact : Remove affected clothing and wash all exposed skin area with mild soap and water, followed by warm water rinse.
- First-aid measures after eye contact : Rinse immediately with plenty of water. Obtain medical attention if pain, blinking or redness persist.
- First-aid measures after ingestion : Rinse mouth. Do NOT induce vomiting. Obtain emergency medical attention.

4.2. Most important symptoms and effects, both acute and delayed

- Symptoms/injuries : Not expected to present a significant hazard under anticipated conditions of normal use.

4.3. Indication of any immediate medical attention and special treatment needed

No additional information available

SECTION 5: Firefighting measures

5.1. Extinguishing media

- Suitable extinguishing media : Foam. Dry powder. Carbon dioxide. Water spray. Sand.
- Unsuitable extinguishing media : Do not use a heavy water stream.

5.2. Special hazards arising from the substance or mixture

No additional information available

5.3. Advice for firefighters

- Firefighting instructions : Use water spray or fog for cooling exposed containers. Exercise caution when fighting any chemical fire. Prevent fire-fighting water from entering environment.
- Protection during firefighting : Do not enter fire area without proper protective equipment, including respiratory protection.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

- Emergency procedures : Evacuate unnecessary personnel.

6.1.2. For emergency responders

- Protective equipment : Equip cleanup crew with proper protection.
- Emergency procedures : Ventilate area.

Best Turf Gold 22-5-6 contains X-cote

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

6.2. Environmental precautions

Prevent entry to sewers and public waters. Notify authorities if liquid enters sewers or public waters.

6.3. Methods and material for containment and cleaning up

Methods for cleaning up : On land, sweep or shovel into suitable containers. Minimize generation of dust. Store away from other materials.

6.4. Reference to other sections

See Heading 8. Exposure controls and personal protection.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling : Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Provide good ventilation in process area to prevent formation of vapor.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions : Keep only in the original container in a cool, well ventilated place away from : Keep container closed when not in use.

Incompatible products : Strong bases. Strong acids.

Incompatible materials : Sources of ignition. Direct sunlight.

7.3. Specific end use(s)

No additional information available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

sulfur (7704-34-9)		
USA ACGIH	ACGIH TWA (mg/m ³)	3 mg/m ³

8.2. Exposure controls

Personal protective equipment : Avoid all unnecessary exposure.

Hand protection : Wear protective gloves.

Eye protection : Chemical goggles or safety glasses.

Respiratory protection : Wear appropriate mask.

Other information : Do not eat, drink or smoke during use.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state : Solid

Appearance : Blue-green and grey granules.

Color : Blue-green; Gray

Odor : characteristic

Odor threshold : No data available

pH : No data available

Relative evaporation rate (butyl acetate=1) : No data available

Melting point : No data available

Freezing point : No data available

Boiling point : No data available

Flash point : No data available

Auto-ignition temperature : No data available

Decomposition temperature : No data available

Flammability (solid, gas) : No data available

Vapor pressure : No data available

Relative vapor density at 20 °C : No data available

Relative density : No data available

Best Turf Gold 22-5-6 contains X-cote

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Solubility	: Slowly soluble, coating insoluble. Water: Solubility in water of component(s) of the mixture : •: 100 g/100ml •: 77 g/100ml •: 38 g/100ml •: 34 g/100ml •:
Log Pow	: No data available
Log Kow	: No data available
Viscosity, kinematic	: No data available
Viscosity, dynamic	: No data available
Explosive properties	: No data available
Oxidizing properties	: No data available
Explosive limits	: No data available

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

No additional information available

10.2. Chemical stability

Stable. Not established.

10.3. Possibility of hazardous reactions

Not established.

10.4. Conditions to avoid

Extremely high temperatures. Direct sunlight. Extremely high or low temperatures.

10.5. Incompatible materials

Oxidizing agent. Prolonged contact may cause oxidation of unprotected metals. Strong acids. Strong bases.

10.6. Hazardous decomposition products

Extremely high temperatures. The product may reach melting point and decompose to release NH₃, SO_x, PO_x, or CN. fume. Carbon monoxide. Carbon dioxide.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity : Not classified

urea (57-13-6)	
LD50 oral rat	8471 mg/kg (Rat)
LD50 dermal rat	> 3200 mg/kg (Rat)
LD50 dermal rabbit	> 21000 mg/kg (Rabbit)
ATE US (oral)	8471.00000000 mg/kg body weight

ammonium sulfate (7783-20-2)	
LD50 oral rat	2840 mg/kg (Rat)
LD50 dermal rat	> 2000 mg/kg
ATE US (oral)	2840.00000000 mg/kg body weight

Monoammonium Phosphate (7722-76-1)	
LD50 oral rat	5750 mg/kg (Rat)
LD50 dermal rat	> mg/kg
LD50 dermal rabbit	> 7940 mg/kg (Rabbit)
ATE US (oral)	5750.00000000 mg/kg body weight

potassium chloride (7447-40-7)	
LD50 oral rat	2600 mg/kg (Rat)
ATE US (oral)	2600.00000000 mg/kg body weight

Manganese Oxysulfate	
LD50 oral rat	2150 mg/kg
ATE US (oral)	2150.00000000 mg/kg body weight

Best Turf Gold 22-5-6 contains X-cote

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

sulfur (7704-34-9)	
LD50 oral rat	> 5000 mg/kg (Rat)
LD50 dermal rabbit	> 2000 mg/kg (Rabbit)
LC50 inhalation rat (mg/l)	> 9.23 mg/l/4h (Rat)

Skin corrosion/irritation	: Causes skin irritation.
Serious eye damage/irritation	: Causes eye irritation.
Respiratory or skin sensitization	: Not classified
Germ cell mutagenicity	: Not classified
	Based on available data, the classification criteria are not met
Carcinogenicity	: Not classified
Reproductive toxicity	: Not classified
	Based on available data, the classification criteria are not met
Specific target organ toxicity (single exposure)	: May cause respiratory irritation.
Specific target organ toxicity (repeated exposure)	: Not classified
	Based on available data, the classification criteria are not met
Aspiration hazard	: Not classified
	Based on available data, the classification criteria are not met
Potential Adverse human health effects and symptoms	: Based on available data, the classification criteria are not met.

SECTION 12: Ecological information

12.1. Toxicity

urea (57-13-6)	
LC50 fish 1	> 6810 mg/l (96 h; <i>Leuciscus idus</i>)
EC50 Daphnia 1	> 10000 mg/l (48 h; <i>Daphnia magna</i>)
LC50 fish 2	17500 mg/l (96 h; <i>Poecilia reticulata</i>)
EC50 Daphnia 2	> 10000 mg/l (24 h; <i>Daphnia magna</i>)
TLM fish 1	17500 ppm (96 h; <i>Poecilia reticulata</i>)
Threshold limit other aquatic organisms 1	120000 mg/l (16 h; Bacteria; Toxicity test)
Threshold limit other aquatic organisms 2	> 10000 mg/l (<i>Pseudomonas putida</i>)
Threshold limit algae 2	> 10000 mg/l (168 h; <i>Scenedesmus quadricauda</i>)

ammonium sulfate (7783-20-2)	
LC50 fish 1	126 mg/l (96 h; <i>Poecilia reticulata</i>)
EC50 Daphnia 1	202 mg/l (96 h; <i>Daphnia magna</i>)
LC50 fish 2	250 - 480 mg/l (96 h; <i>Brachydanio rerio</i>)
EC50 Daphnia 2	433 mg/l (50 h; <i>Daphnia magna</i>)
TLM fish 1	1290 ppm (96 h; <i>Gambusia affinis</i>)

Monoammonium Phosphate (7722-76-1)	
LC50 fish 1	155 ppm (96 h; <i>Pimephales promelas</i>)

potassium chloride (7447-40-7)	
LC50 fish 1	920 mg/l (96 h; <i>Gambusia affinis</i> ; Static system)
EC50 Daphnia 1	630 mg/l (48 h; <i>Ceriodaphnia dubia</i>)
LC50 fish 2	2010 mg/l (96 h; <i>Lepomis macrochirus</i> ; Static system)
EC50 Daphnia 2	660 mg/l (48 h; <i>Daphnia magna</i>)
Threshold limit algae 1	850 mg/l (72 h; <i>Scenedesmus subspicatus</i>)
Threshold limit algae 2	> 100 mg/l (72 h; <i>Scenedesmus subspicatus</i> ; GLP)

sulfur (7704-34-9)	
LC50 fish 1	866 mg/l (96 h; <i>Brachydanio rerio</i>)
LC50 fish 2	> 100 mg/l 96 h; <i>Salmo gairdneri</i> (<i>Oncorhynchus mykiss</i>)
TLM fish 1	10000 ppm (96 h; <i>Gambusia affinis</i>)
Threshold limit other aquatic organisms 1	> 10000 mg/l (24 h; <i>Daphnia magna</i>)

Best Turf Gold 22-5-6 contains X-cote

Safety Data Sheet

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12.2. Persistence and degradability

Best Turf Gold 22-5-6 contains X-cote	
Persistence and degradability	Not established.
urea (57-13-6)	
Persistence and degradability	Inherently biodegradable. Hydrolysis in water. Not established.
ThOD	0.27 g O ₂ /g substance
ammonium sulfate (7783-20-2)	
Persistence and degradability	Biodegradability in water: no data available. Not established.
Monoammonium Phosphate (7722-76-1)	
Persistence and degradability	Biodegradability in water: no data available. Not established.
potassium chloride (7447-40-7)	
Persistence and degradability	Biodegradability: not applicable. Not established.
Biochemical oxygen demand (BOD)	Not applicable
Chemical oxygen demand (COD)	Not applicable
ThOD	Not applicable
BOD (% of ThOD)	Not applicable
Iron Oxysulfate	
Persistence and degradability	Not established.
sulfur (7704-34-9)	
Persistence and degradability	Biodegradability: not applicable. Biodegradability in soil: not applicable. Adsorbs into the soil. Not established.
Biochemical oxygen demand (BOD)	Not applicable
Chemical oxygen demand (COD)	Not applicable
ThOD	Not applicable
BOD (% of ThOD)	Not applicable
Sand	
Persistence and degradability	Not established.
Wax (64771-72-8)	
Persistence and degradability	Not established.

12.3. Bioaccumulative potential

Best Turf Gold 22-5-6 contains X-cote	
Bioaccumulative potential	Not established.
urea (57-13-6)	
BCF fish 1	1 (72 h; Brachydanio rerio; Fresh water)
BCF other aquatic organisms 1	11700 (Chlorella sp.)
Log Pow	-2.59 - -1.59
Bioaccumulative potential	Bioaccumulation: not applicable. Not established.
ammonium sulfate (7783-20-2)	
Log Pow	-5.1
Bioaccumulative potential	Bioaccumulation: not applicable. Not established.
Monoammonium Phosphate (7722-76-1)	
Bioaccumulative potential	Not bioaccumulative. Not established.
potassium chloride (7447-40-7)	
Log Pow	-0.46 (Estimated value)
Bioaccumulative potential	Bioaccumulation: not applicable. Not established.
Iron Oxysulfate	
Bioaccumulative potential	Not established.
sulfur (7704-34-9)	
Log Pow	0.23 (Estimated value)

Best Turf Gold 22-5-6 contains X-cote

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sulfur (7704-34-9)	
Bioaccumulative potential	Low potential for bioaccumulation (Log Kow < 4). Not established.

Sand	
Bioaccumulative potential	Not established.

Wax (64771-72-8)	
Bioaccumulative potential	Not established.

12.4. Mobility in soil

sulfur (7704-34-9)	
Ecology - soil	Not toxic to bees.

12.5. Other adverse effects

Effect on ozone layer : No additional information available
Effect on the global warming : No known ecological damage caused by this product.
Other information : Avoid release to the environment.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Waste disposal recommendations : Dispose in a safe manner in accordance with local/national regulations.
Ecology - waste materials : Avoid release to the environment.

SECTION 14: Transport information

In accordance with DOT
Not regulated for transport

Additional information

Other information : No supplementary information available.

ADR

Transport document description :

Transport by sea

No additional information available

Air transport

No additional information available

SECTION 15: Regulatory information

15.1. US Federal regulations

All components of this product are listed on the Toxic Substances Control Act (TSCA) inventory except for:

Iron Oxysulfate	CAS No	C>=1.00% ; C<=2.50%
Manganese Oxysulfate	CAS No	C>=0.10% ; C<=0.20%
Sand	CAS No	C>=1.00% ; C<=2.00%
Polymer Coating	CAS No	C>=4.00% ; C<=7.00%

This product or mixture does not contain a toxic chemical or chemicals in excess of the applicable de minimis concentration as specified in 40 CFR §372.38(a) subject to the reporting requirements of section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372.

Iron Oxysulfate	
Not listed on the United States TSCA (Toxic Substances Control Act) inventory	

Sand	
Not listed on the United States TSCA (Toxic Substances Control Act) inventory	

15.2. International regulations

CANADA

No additional information available

Best Turf Gold 22-5-6 contains X-cote

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EU-Regulations

No additional information available

Classification according to Regulation (EC) No. 1272/2008 [CLP]

Classification according to Directive 67/548/EEC or 1999/45/EC

Not classified

15.2.2. National regulations

No additional information available

15.3. US State regulations

California Proposition 65 - This product does not contain any substances known to the state of California to cause cancer and/or reproductive harm

sulfur (7704-34-9)

U.S. - New Jersey - Right to Know Hazardous Substance List

SECTION 16: Other information

Data sources

:
REGULATION (EC) No 1272/2008 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 16 December 2008 on classification, labeling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006.

Other information

: None.

Full text of H-phrases: see section 16:

Eye Irrit. 2B	Serious eye damage/eye irritation Category 2B
Skin Irrit. 2	Skin corrosion/irritation Category 2
STOT SE 3	Specific target organ toxicity (single exposure) Category 3
H315	Causes skin irritation
H320	Causes eye irritation
H335	May cause respiratory irritation

SDS US (GHS HazCom 2012)

Disclaimer: This information relates to the specific material designated and may not be valid for such material used in combination with any other materials or in any process. Such information is to the best of our knowledge and belief, accurate and reliable as of the date compiled. However, no representation, warranty or guarantee is made as to its accuracy, reliability or completeness. NO WARRANTY OF MERCHANTABILITY, FITNESS FOR ANY PARTICULAR PURPOSE, OR ANY OTHER WARRANTY, EXPRESS OR IMPLIED, IS MADE CONCERNING THE INFORMATION HEREIN PROVIDED. It is the user's responsibility to satisfy himself as to the suitability and completeness of such information for his own particular use. We do not accept liability for any loss or damage that may occur from the use of this information nor do we offer warranty against patent infringement.

Conforms: GHS (rev 3)(2009)
(This Safety Data Sheet conforms to the requirements of the Hazard Communication Standard (HCS)
(29 CFR 1910.1200(g)), revised in 2012.) - United States

Date of issue/ Date of revision : 11/27/2014
Date of previous issue : 12/16/2013
Version : 1.1



SAFETY DATA SHEET

Turf Royal 12-7-14 YaraMila 21-7-14

Section 1. Identification

Product name : YaraMila 21-7-14
Product type : Solid (granules)
Product code : PKE16G

Uses

Area of application : Professional applications
Material uses : Fertilizers.

Supplier

Supplier's details : Yara North America, Inc.

Address

Street : 100 North Tampa Street, Suite 3200
Postal code : 33602
City : TAMPA
Country : United States

Telephone number : +1 813 222 5700
Fax no. : +1 813 875 5735
e-mail address of person responsible for this SDS : yna-hesq@yara.com
Emergency telephone number (with hours of operation) : US: Chemtrec 24-hours Emergency Response: 1-800-424-9300
Canada: 24 Hour Emergency Service, (Canutec 613-996-6666)

National advisory body/Poison Center

Name : The National Poisons Emergency number
Telephone number : 1 800 222 1222

Section 2. Hazards identification

OSHA/HCS status : This material is not considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Classification and labelling have been performed following the guidelines and recommendation of GHS and the intended use.

Classification of the substance or mixture : Not classified.

GHS label elements

Signal word : No signal word.

Hazard statements : Not applicable.

Precautionary statements

General : Not applicable.

Prevention : Not applicable.

Response : Not applicable.

Storage : Not applicable.

Disposal : Not applicable.

Hazards not otherwise classified : Product forms slippery surface when combined with water.

Section 3. Composition/information on ingredients

Substance/mixture : Mixture

Product / ingredient name	CAS number	%
Nitric acid ammonium salt (1:1)	CAS: 6484-52-2	>=50 - <65

Any concentration shown as a range is to protect confidentiality or is due to batch variation.

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures

Description of necessary first aid measures

- Eye contact** : Rinse with plenty of running water. Check for and remove any contact lenses. Get medical attention if irritation occurs.
- Inhalation** : If inhaled, remove to fresh air. In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.
- Skin contact** : Wash with soap and water. Get medical attention if irritation develops.
- Ingestion** : Wash out mouth with water. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Do not induce vomiting unless directed to do so by medical personnel. Get medical attention if adverse health effects persist or are severe.

Most important symptoms/effects, acute and delayed

Potential acute health effects

- Eye contact** : No known significant effects or critical hazards.
- Inhalation** : Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure.
- Skin contact** : No known significant effects or critical hazards.
- Ingestion** : No known significant effects or critical hazards.

Over-exposure signs/symptoms

Eye contact	:	No specific data.
Inhalation	:	No specific data.
Skin contact	:	No specific data.
Ingestion	:	No specific data.

Indication of immediate medical attention and special treatment needed, if necessary

Notes to physician	:	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled. In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.
Specific treatments	:	No specific treatment.
Protection of first-aiders	:	No action shall be taken involving any personal risk or without suitable training.

See toxicological information (section 11)

Section 5. Fire-fighting measures

Extinguishing media

Suitable extinguishing media	:	Use flooding quantities of water for extinction.
Unsuitable extinguishing media	:	Do NOT use chemical extinguisher or foam or attempt to smother the fire with steam or sand.
Specific hazards arising from the chemical	:	No specific fire or explosion hazard.
Hazardous thermal decomposition products	:	Decomposition products may include the following materials: nitrogen oxides sulfur oxides phosphorus oxides metal oxide/oxides Avoid breathing dusts, vapors or fumes from burning materials. In case of inhalation of decomposition products in a fire, symptoms may be delayed.
Special protective actions for fire-fighters	:	Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.
Special protective equipment for fire-fighters	:	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.
Remark	:	Non-flammable.
Remark	:	None.

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

For non-emergency personnel	:	No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Put on appropriate personal protective equipment.
For emergency responders	:	If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable

- materials. See also the information in "For non-emergency personnel".
- Personal precautions, protective equipment and emergency procedures** : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Put on appropriate personal protective equipment (see Section 8).
- Environmental precautions** : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Methods and material for containment and cleaning up

- Small spill** : Move containers from spill area. Vacuum or sweep up material and place in a designated, labeled waste container. Dispose of via a licensed waste disposal contractor.
- Large spill** : Move containers from spill area. Prevent entry into sewers, water courses, basements or confined areas. Vacuum or sweep up material and place in a designated, labeled waste container. Dispose of via a licensed waste disposal contractor. Note: see section 1 for emergency contact information and section 13 for waste disposal.

Section 7. Handling and storage

Precautions for safe handling

- Precautions for safe handling** : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.
- Protective measures** : Put on appropriate personal protective equipment (see Section 8).
- Advice on general occupational hygiene** : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.
- Conditions for safe storage, including any incompatibilities** : Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination. Keep away from: organic materials, oil and grease.

Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

Ingredient name	Exposure limits
Sulfuric acid, calcium salt (1:1)	<p>OSHA PEL 1989 (1989-03-01) PEL: Permissible Exposure Level 15 mg/m3 Form: Total dust</p> <p>OSHA PEL 1989 (1989-03-01) PEL: Permissible Exposure Level 5 mg/m3 Form: Respirable fraction</p> <p>OSHA PEL (1993-06-30) PEL: Permissible Exposure Level 15 mg/m3 Form: Total dust</p> <p>OSHA PEL (1993-06-30) PEL: Permissible Exposure Level 5 mg/m3 Form: Respirable fraction</p> <p>NIOSH REL (1994-06-01) Time Weighted Average (TWA) 10 mg/m3 Form: Total</p> <p>NIOSH REL (1994-06-01) Time Weighted Average (TWA) 5 mg/m3 Form: Respirable fraction</p> <p>ACGIH TLV (2005-12-09) TLV-TWA: Threshold Limit Value - Time weighted average PEL: Permissible Exposure Level 10 mg/m3 Form: Inhalable fraction</p>

Appropriate engineering controls

: No special ventilation requirements. Good general ventilation should be sufficient to control worker exposure to airborne contaminants. If this product contains ingredients with exposure limits, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure below any recommended or statutory limits.

Environmental exposure controls

: Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Individual protection measures**Hygiene measures**

: Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Wash contaminated clothing before reusing. A washing facility or water for eye and skin cleaning purposes should be present.

Eye/face protection

: Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts.

Skin protection**Hand protection**

: Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.

Body protection

: Personal protective equipment for the body should be selected based on the task being performed and the risks involved.

Other skin protection

: Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Respiratory protection

: Use a properly fitted, particulate filter respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

Section 9. Physical and chemical properties

Appearance

Physical state	: Solid [granules]
Color	: Beige. Gray. White.
Odor	: Odorless.
Odor threshold	: Not determined.
pH	: > 4.5 [Conc.: 105 g/l]
Melting/freezing point	: Decomposes: > 210 °C (410.00 °F)
Boiling/condensation point	: Not determined.
Sublimation temperature	: Not determined.
Flash point	: Not determined.
Evaporation rate	: Not determined.
Flammability	: Non-flammable.
Lower and upper explosive (flammable) limits	: Lower: Not determined. Upper: Not determined.
Vapor pressure	: Not determined.
Relative density	: Not determined.
Solubility	: Soluble in the following materials: cold water
Partition coefficient: n-octanol/water	: Not determined.
Auto-ignition temperature	: Not determined.
Decomposition temperature	: > 210 °C (410.00 °F)
Viscosity	: Dynamic: Not determined. : Kinematic: Not determined.
Explosive properties	: None.
Oxidizing properties	: None.

Section 10. Stability and reactivity

Reactivity	: No specific test data related to reactivity available for this product or its ingredients.
Chemical stability	: The product is stable.
Possibility of hazardous reactions	: Under normal conditions of storage and use, hazardous reactions will not occur.
Conditions to avoid	: Avoid contamination by any source including metals, dust and organic materials.
Incompatible materials	: alkalis combustible materials reducing materials organic materials acids
Hazardous decomposition products	: Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

Product / ingredient name	Result	Species	Dose	Exposure	References
Nitric acid ammonium salt (1:1)					
	LD50 Oral	Rat	2,950 mg/kg OECD 401	-	IUCLID 5
	LD50 Dermal	Rat	> 5,000 mg/kg OECD 402	-	IUCLID 5

Conclusion/Summary : No known significant effects or critical hazards.

Irritation/Corrosion

Product / ingredient name	Result	Species	Score	Exposure	Observation	References
Mixture	Eyes - Non-irritating. OECD 405	Rabbit	< 1	1 - 48 h	14 d	Fertilizers Europe
Nitric acid ammonium salt (1:1)	Eyes - Irritant OECD 405	Rabbit			-	IUCLID 5

Conclusion/Summary

Skin : Non-irritating.

Eyes : Non-irritating.

Respiratory : Non-irritating.

Sensitization

Conclusion/Summary

Skin : No known significant effects or critical hazards.

Respiratory : No known significant effects or critical hazards.

Mutagenicity

Conclusion/Summary : No known significant effects or critical hazards.

Carcinogenicity

Classification

Product / ingredient name	OSHA	IARC	NTP
Nitric acid ammonium salt (1:1)		2A	

Conclusion/Summary : There is inadequate evidence in humans and in animals for the carcinogenicity of nitrate in food. Nitrate can be reduced to form nitrite and under acidic gastric conditions nitrite may

react to generate N-nitroso compounds (endogenous nitrosation). Under conditions that result in endogenous nitrosation ingested nitrate is classified IARC Group 2A. The product is not to be ingested.

Reproductive toxicity

Product / ingredient name	Maternal toxicity	Fertility	Development toxin	Species	Dose	Exposure	References
Nitric acid ammonium salt (1:1)	-	Negative	Negative	Rat	Oral: > 1500 mg/kg bw/day OECD 422	28 days	IUCLID 5

Conclusion/Summary : No known significant effects or critical hazards.

Teratogenicity

Conclusion/Summary : No known significant effects or critical hazards.

Specific target organ toxicity (single exposure)

No known significant effects or critical hazards.

Specific target organ toxicity (repeated exposure)

No known significant effects or critical hazards.

Aspiration hazard

No known significant effects or critical hazards.

Information on the likely routes of exposure : Not available.

Potential acute health effects

Eye contact : No known significant effects or critical hazards.
Inhalation : Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure.
Skin contact : No known significant effects or critical hazards.
Ingestion : No known significant effects or critical hazards.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact : No specific data.
Inhalation : No specific data.
Skin contact : No specific data.
Ingestion : No specific data.

Delayed and immediate effects and also chronic effects from short and long term exposure

Short term exposure

Potential immediate effects : Not available.
Potential delayed effects : Not available.

Long term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Potential chronic health effects

Product / ingredient name	Result	Species	Dose	Exposure	References
Nitric acid ammonium salt (1:1)	NOAEL Oral	Rat	256 mg/kg OECD 422	28days	IUCLID 5
Nitric acid ammonium salt (1:1)	NOEC Dusts and mists Inhalation	Rat	> 185 mg/kg OECD 412	2weeks 5 hours per day	IUCLID 5

Conclusion/Summary : No known significant effects or critical hazards.

General : No known significant effects or critical hazards.
Carcinogenicity : No known significant effects or critical hazards.
Mutagenicity : No known significant effects or critical hazards.
Teratogenicity : No known significant effects or critical hazards.
Developmental effects : No known significant effects or critical hazards.
Fertility effects : No known significant effects or critical hazards.

Over-exposure signs/symptoms

Eye contact : No specific data.

Inhalation : No specific data.

Skin contact : No specific data.

Ingestion : No specific data.

Numerical measures of toxicity

Acute toxicity estimates
Not available.

Section 12. Ecological information

Toxicity

Product / ingredient name	Result	Species	Exposure	References
Nitric acid ammonium salt (1:1)				
	Acute LC50 447 mg/l Fresh water	Fish - Labeo boga	48 h	IUCLID 5
	Acute EC50 490 mg/l Fresh water	Aquatic invertebrates. - Daphnia	48 h	IUCLID 5
	Acute EC50 1,700 mg/l Salt water	Aquatic plants - Heterosigma akashiwo	10 d	IUCLID 5

Conclusion/Summary : No known significant effects or critical hazards.

Persistence/degradability

Conclusion/Summary : No known significant effects or critical hazards.

Product / ingredient name	Aquatic half-life	Photolysis	Biodegradability
Nitric acid ammonium salt (1:1)			Not relevant for inorganic substances.

Bioaccumulative potential

Conclusion/Summary : No known significant effects or critical hazards.

Mobility in soil

Soil/water partition coefficient (KOC) : Not available.

Mobility : Not available.

Other adverse effects : No known significant effects or critical hazards.

Section 13. Disposal considerations**Product**

Methods of disposal : The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

United States - RCRA Acute hazardous waste "P" List:

Not listed

United States - RCRA Toxic hazardous waste "U" List:

Not listed

Section 14. Transport information

Regulation: UN Class	
14.1 UN number	Not regulated.
14.2 UN proper shipping name	
14.3 Transport hazard class(es)	
14.4 Packing group	
14.5 Environmental hazards	No.
14.6 Additional information	

Environmental hazards : No.

Regulation: IMDG

14.1 UN number Not regulated.

14.2 UN proper shipping name

14.3 Transport hazard class(es)

14.4 Packing group

14.5 Environmental hazards No.

14.6 Additional information

Marine pollutant : No.

Regulation: IATA

14.1 UN number Not regulated.

14.2 UN proper shipping name

14.3 Transport hazard class(es)

14.4 Packing group

14.5 Environmental hazards No.

14.6 Additional information

Marine pollutant No.

Regulation: DOT Classification

14.1 UN number Not regulated.

14.2 UN proper shipping name

14.3 Transport hazard class(es)

14.4 Packing group

14.5 Environmental hazards No.

14.6 Additional information

Environmental hazards : No.

Regulation: TDG Class

14.1 UN number Not regulated.

14.2 UN proper shipping name

14.3 Transport hazard class(es)

14.4 Packing group

14.5 Environmental hazards No.

14.6 Additional information

Environmental hazards : No.

Special precautions for user : Transport within user's premises: always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the

event of an accident or spillage.

Remark : A NPK fertilizer not liable to self-sustaining exothermic decomposition according to the S.1 trough test as defined in the recommendations on the Transport of Dangerous Goods, Manual of Tests and Criteria, part III, section 38.

IMSBC

Bulk cargo shipping name : AMMONIUM NITRATE BASED FERTILIZER (non-hazardous)

Class : Not applicable.

Group : C

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code : Not applicable.

Section 15. Regulatory information

United States

U.S. Federal regulations :

- United States - TSCA 12(b) - Chemical export notification:** None of the components are listed.
- United States - TSCA 4(a) - Final Test Rules:** Not listed
- United States - TSCA 4(e) - ITC Priority list:** Not listed
- United States - TSCA 4(a) - Proposed test rules:** Not listed
- United States - TSCA 4(f) - Priority risk review:** Not listed
- United States - TSCA 5(a)2 - Final significant new use rules:** Not listed
- United States - TSCA 5(a)2 - Proposed significant new use rules:** Not listed
- United States - TSCA 5(e) - Substances consent order:** Not listed
- United States - TSCA 6 - Final risk management:** Not listed
- United States - TSCA 6 - Proposed risk management:** Not listed
- United States - TSCA 8(a) - Comprehensive assessment report (CAIR):** Not listed
- United States - TSCA 8(a) - Chemical risk rules:** Not listed
- United States - TSCA 8(a) - Dioxin/Furane precursor:** Not listed
- United States - TSCA 8(a) - Chemical Data Reporting (CDR):** Not determined
- United States - TSCA 8(a) - Preliminary assessment report (PAIR):** Not listed
- United States - TSCA 8(c) - Significant adverse reaction (SAR):** Not listed
- United States - TSCA 8(d) - Health and safety studies:** Not listed
- United States - EPA Clean water act (CWA) section 307 - Priority pollutants:** Not listed
- United States - EPA Clean water act (CWA) section 311 - Hazardous substances:** Not listed

**United States - EPA Clean air act (CAA) section 112 -
Accidental release prevention - Flammable
substances:** Not listed
**United States - EPA Clean air act (CAA) section 112 -
Accidental release prevention - Toxic substances:**
Not listed
**United States - Department of commerce - Precursor
chemical:** Not listed

**Clean Air Act Section 112(b)
Hazardous Air Pollutants
(HAPs)** : Not listed
**Clean Air Act Section 602
Class I Substances** : Not listed
**Clean Air Act Section 602
Class II Substances** : Not listed
**DEA List I Chemicals
(Precursor Chemicals)** : Not listed
**DEA List II Chemicals
(Essential Chemicals)** : Not listed

SARA 302/304
Not applicable.

SARA 304 RQ : Not applicable.

SARA 311/312

Classification : Delayed (chronic) health hazard

SARA 313

	<u>Product name</u>	<u>CAS number</u>	<u>Concentration</u>
Form R - Reporting requirements	: Nitric acid ammonium salt (1:1)	6484-52-2	50 - 65
Supplier notification	: Nitric acid ammonium salt (1:1)	6484-52-2	50 - 65

SARA 313 notifications must not be detached from the MSDS and any copying and redistribution of the MSDS shall include copying and redistribution of the notice attached to copies of the MSDS subsequently redistributed.

State regulations

Massachusetts : The following components are listed:
Nitric acid ammonium salt (1:1)
Sulfuric acid, calcium salt (1:1)
Sulfuric acid ammonium salt (1:2)

New York : None of the components are listed.

New Jersey : The following components are listed:
Nitric acid ammonium salt (1:1)
Sulfuric acid, calcium salt (1:1)

Pennsylvania : The following components are listed:
Nitric acid ammonium salt (1:1)
Sulfuric acid, calcium salt (1:1)
Sulfuric acid ammonium salt (1:2)

California Prop. 65

This product contains a chemical (or chemicals) known to the State of California to cause cancer and

birth defects or other reproductive harm.

International lists

- Philippines inventory (PICCS):** All components are listed or exempted.
- New Zealand Inventory of Chemicals (NZIoC):** All components are listed or exempted.
- Korea inventory:** All components are listed or exempted.
- China inventory (IECSC):** All components are listed or exempted.
- Australia inventory (AICS):** All components are listed or exempted.
- Canada inventory (DSL and NDSL):** All components are listed or exempted.
- United States inventory (TSCA 8b):** All components are listed or exempted.
- EC INVENTORY (EINECS/ELINCS):** All components are listed or exempted.

Safety, health and environmental regulations specific for the product : No known other specific national and/or regional regulations applicable to this product (including its ingredients).

Section 16. Other information

Hazardous Material Information System (U.S.A.)

Health	-	1
		0
Physical hazards		0

Caution: HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. Although HMIS® ratings are not required on MSDSs under 29 CFR 1910.1200, the preparer may choose to provide them. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered mark of the National Paint & Coatings Association (NPCA). HMIS® materials may be purchased exclusively from J. J. Keller (800) 327-6868.

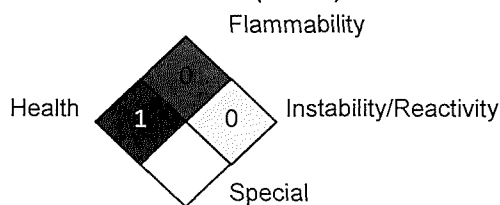
The customer is responsible for determining the PPE code for this material.

Chronic toxicity:

- : No data available.

* : Carcinogen, Target organs, Reproductive effects, Sensitizer to lungs

National Fire Protection Association (U.S.A.)



Reprinted with permission from NFPA 704-2001, Identification of the Hazards of Materials for Emergency Response Copyright ©1997, National Fire Protection Association, Quincy, MA 02269. This reprinted material is not the complete and official position of the National Fire Protection Association, on the referenced subject which is represented only by the standard in its entirety.

Copyright ©2001, National Fire Protection Association, Quincy, MA 02269. This warning system is intended to be interpreted and applied only by properly trained individuals to identify fire, health and reactivity hazards of chemicals. The user is referred to certain limited number of chemicals with recommended classifications in NFPA 49 and NFPA 325, which would be used as a guideline only. Whether the chemicals are classified by NFPA or not, anyone using the 704 systems to classify chemicals does so at their own risk.

Key to abbreviations : ADN/ADNR = European Provisions concerning the International Carriage of

Dangerous Goods by Inland Waterway
 ADR = The European Agreement concerning the International Carriage of
 Dangerous Goods by Road
 ATE = Acute Toxicity Estimate
 BCF = Bioconcentration Factor
 bw = Body weight
 GHS = Globally Harmonized System of Classification and Labelling of
 Chemicals
 IATA = International Air Transport Association
 IBC = Intermediate Bulk Container
 IMDG = International Maritime Dangerous Goods
 LogPow = logarithm of the octanol/water partition coefficient
 MARPOL 73/78 = International Convention for the Prevention of Pollution
 From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine
 pollution)
 NOHSC - National Occupational Health and Safety Commission
 RID = The Regulations concerning the International Carriage of Dangerous
 Goods by Rail
 SUSDP - Standard for the Uniform Scheduling of Drugs and Poisons
 UN = United Nations

References : EU REACH IUCLID5 CSR.
 National Institute for Occupational Safety and Health, U.S.
 Dept. of Health, Education, and Welfare, Reports and
 Memoranda Registry of Toxic Effects of Chemical
 Substances.
 IHS, 4777 Levy Street, St Laurent, Quebec HAR 2P9,
 Canada.

History

Date of printing : 12/08/2014
Date of issue/Date of revision : 11/27/2014
Date of previous issue : 12/16/2013
Version : 1.1
Prepared by : Yara Product Classifications & Regulations.

|| Indicates information that has changed from previously issued version.

Notice to reader

To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein. Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.



Best Turf Supreme 16-6-8 plus Trimec

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Product form : Mixture
Product name : Best Turf Supreme 16-6-8 plus Trimec
Product code : M74070

1.2. Relevant identified uses of the substance or mixture and uses advised against

1.3. Details of the supplier of the safety data sheet

JR Simplot Company
P.O. Box 70013
Boise, ID 83707
T 1-208-336-2110

1.4. Emergency telephone number

Emergency number : CHEMTREC 1-800-424-9300

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification (GHS-US)

Eye Irrit. 2B H320
Skin Sens. 1 H317
Carc. 2 H351
STOT SE 3 H335

Full text of H-phrases: see section 16

2.2. Label elements

GHS-US labeling

Hazard pictograms (GHS-US)



GHS07

GHS08

Signal word (GHS-US)

: Warning

Hazard statements (GHS-US)

: H317 - May cause an allergic skin reaction
H320 - Causes eye irritation
H335 - May cause respiratory irritation
H351 - Suspected of causing cancer

Precautionary statements (GHS-US)

: P201 - Obtain special instructions before use
P202 - Do not handle until all safety precautions have been read and understood
P261 - Avoid breathing dust/fume/gas/mist/vapors/spray
P264 - Wash ... thoroughly after handling
P271 - Use only outdoors or in a well-ventilated area
P272 - Contaminated work clothing must not be allowed out of the workplace
P280 - Wear protective gloves/protective clothing/eye protection/face protection
P302+P352 - If on skin: Wash with plenty of water/...
P304+P340 - If inhaled: Remove person to fresh air and keep comfortable for breathing
P305+P351+P338 - If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P308+P313 - If exposed or concerned: Get medical advice/attention
P312 - Call a poison center/doctor/... if you feel unwell
P321 - Specific treatment (see ... on this label)
P333+P313 - If skin irritation or rash occurs: Get medical advice/attention
P337+P313 - If eye irritation persists: Get medical advice/attention
P362+P364 - Take off contaminated clothing and wash it before reuse
P403+P233 - Store in a well-ventilated place. Keep container tightly closed
P405 - Store locked up
P501 - Dispose of contents/container to ...

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2.3. Other hazards

No additional information available

2.4. Unknown acute toxicity (GHS-US)

Not applicable

SECTION 3: Composition/information on ingredients

3.1. Substance

Not applicable

3.2. Mixture

Name	Product identifier	%	Classification (GHS-US)
ammonium sulfate	(CAS No) 7783-20-2		Eye Irrit. 2B, H320 STOT SE 3, H335
Monoammonium Phosphate	(CAS No) 7722-76-1		Eye Irrit. 2B, H320 STOT SE 3, H335
potassium sulfate	(CAS No) 7778-80-5		Not classified
Iron Oxysulfate			Eye Irrit. 2B, H320
Sand			STOT SE 3, H335
2,4-dichlorophenoxyacetic acid	(CAS No) 94-75-7		Acute Tox. 4 (Oral), H302 Eye Dam. 1, H318 Skin Sens. 1, H317 Carc. 2, H351 STOT SE 3, H335 Aquatic Chronic 3, H412
Manganese Oxysulfate			Eye Irrit. 2B, H320
mecoprop	(CAS No) 93-65-2		Acute Tox. 4 (Oral), H302 Skin Irrit. 2, H315 Eye Dam. 1, H318 Carc. 2, H351 Aquatic Acute 1, H400 Aquatic Chronic 1, H410
dicamba	(CAS No) 1918-00-9		Acute Tox. 4 (Oral), H302 Acute Tox. 4 (Dermal), H312 Eye Dam. 1, H318 Aquatic Chronic 3, H412

Full text of H-phrases: see section 16

SECTION 4: First aid measures

4.1. Description of first aid measures

- First-aid measures general : Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label where possible).
- First-aid measures after inhalation : Allow victim to breathe fresh air. Allow the victim to rest.
- First-aid measures after skin contact : Remove affected clothing and wash all exposed skin area with mild soap and water, followed by warm water rinse.
- First-aid measures after eye contact : Rinse immediately with plenty of water. Obtain medical attention if pain, blinking or redness persist.
- First-aid measures after ingestion : Rinse mouth. Do NOT induce vomiting. Obtain emergency medical attention.

4.2. Most important symptoms and effects, both acute and delayed

- Symptoms/injuries : Not expected to present a significant hazard under anticipated conditions of normal use.

4.3. Indication of any immediate medical attention and special treatment needed

No additional information available

SECTION 5: Firefighting measures

5.1. Extinguishing media

- Suitable extinguishing media : Foam. Dry powder. Carbon dioxide. Water spray. Sand.
- Unsuitable extinguishing media : Do not use a heavy water stream.

5.2. Special hazards arising from the substance or mixture

No additional information available

5.3. Advice for firefighters

- Firefighting instructions : Use water spray or fog for cooling exposed containers. Exercise caution when fighting any chemical fire. Prevent fire-fighting water from entering environment.

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Protection during firefighting : Do not enter fire area without proper protective equipment, including respiratory protection.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

Emergency procedures : Evacuate unnecessary personnel.

6.1.2. For emergency responders

Protective equipment : Equip cleanup crew with proper protection.

Emergency procedures : Ventilate area.

6.2. Environmental precautions

Prevent entry to sewers and public waters. Notify authorities if liquid enters sewers or public waters.

6.3. Methods and material for containment and cleaning up

Methods for cleaning up : On land, sweep or shovel into suitable containers. Minimize generation of dust. Store away from other materials.

6.4. Reference to other sections

See Heading 8. Exposure controls and personal protection.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling : Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Provide good ventilation in process area to prevent formation of vapor.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions : Keep only in the original container in a cool, well ventilated place away from : Keep container closed when not in use.

Incompatible products : Strong bases. Strong acids.

Incompatible materials : Sources of ignition. Direct sunlight.

7.3. Specific end use(s)

No additional information available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Best Turf Supreme 16-6-8 plus Trimec	
ACGIH	Not applicable
OSHA	Not applicable
2,4-dichlorophenoxyacetic acid (94-75-7)	
ACGIH	Not applicable
OSHA	Not applicable
mecoprop (93-65-2)	
ACGIH	Not applicable
OSHA	Not applicable
dicamba (1918-00-9)	
ACGIH	Not applicable
OSHA	Not applicable
ammonium sulfate (7783-20-2)	
ACGIH	Not applicable
OSHA	Not applicable
Monoammonium Phosphate (7722-76-1)	
ACGIH	Not applicable

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Monoammonium Phosphate (7722-76-1)	
OSHA	Not applicable

potassium sulfate (7778-80-5)	
ACGIH	Not applicable
OSHA	Not applicable

Iron Oxysulfate	
ACGIH	Not applicable
OSHA	Not applicable

Manganese Oxysulfate	
ACGIH	Not applicable
OSHA	Not applicable

Sand	
ACGIH	Not applicable
OSHA	Not applicable

8.2. Exposure controls

- Personal protective equipment : Avoid all unnecessary exposure.
- Hand protection : Wear protective gloves.
- Eye protection : Chemical goggles or safety glasses.
- Respiratory protection : Wear appropriate mask.
- Other information : Do not eat, drink or smoke during use.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

- Physical state : Solid
- Appearance : Light grey granules.
- Color : Gray
- Odor : Odorless
- Odor threshold : No data available
- pH : No data available
- Melting point : No data available
- Freezing point : No data available
- Boiling point : No data available
- Flash point : No data available
- Relative evaporation rate (butyl acetate=1) : No data available
- Flammability (solid, gas) : No data available
- Explosion limits : No data available
- Explosive properties : No data available
- Oxidizing properties : No data available
- Vapor pressure : No data available
- Relative density : No data available
- Relative vapor density at 20 °C : No data available
- Solubility : Soluble.
Water: Solubility in water of component(s) of the mixture :
•: 0.06 g/100ml •: 0.073 g/100ml •: 0.6 g/100ml •: 77 g/100ml •: 38 g/100ml •: 11 g/100ml
- Log Pow : No data available
- Log Kow : No data available
- Auto-ignition temperature : No data available

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Decomposition temperature	: No data available
Viscosity	: No data available
Viscosity, kinematic	: No data available
Viscosity, dynamic	: No data available

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

No additional information available

10.2. Chemical stability

Not established.

10.3. Possibility of hazardous reactions

Not established.

10.4. Conditions to avoid

Direct sunlight. Extremely high or low temperatures.

10.5. Incompatible materials

Strong acids. Strong bases.

10.6. Hazardous decomposition products

fume. Carbon monoxide. Carbon dioxide.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity : Not classified

2,4-dichlorophenoxyacetic acid (94-75-7)	
LD50 oral rat	630-774,Rat; Other; Experimental value; 375 mg/kg; Rat
LD50 dermal rabbit	> 2000 mg/kg (Rabbit; Experimental value; Other)
ATE US (oral)	500.000 mg/kg body weight
mecoprop (93-65-2)	
LD50 oral rat	650 mg/kg (Rat; Literature study)
ATE US (oral)	650.000 mg/kg body weight
dicamba (1918-00-9)	
LD50 oral rat	1039 mg/kg (Rat)
LD50 dermal rat	2000 mg/kg (Rat)
LD50 dermal rabbit	> 2000 mg/kg (Rabbit)
ATE US (oral)	1039.000 mg/kg body weight
ATE US (dermal)	2000.000 mg/kg body weight
ammonium sulfate (7783-20-2)	
LD50 oral rat	2840 mg/kg (Rat)
LD50 dermal rat	> 2000 mg/kg
ATE US (oral)	2840.000 mg/kg body weight
Monoammonium Phosphate (7722-76-1)	
LD50 oral rat	5750 mg/kg (Rat)
LD50 dermal rat	> mg/kg
LD50 dermal rabbit	> 7940 mg/kg (Rabbit)
ATE US (oral)	5750.000 mg/kg body weight
potassium sulfate (7778-80-5)	
LD50 oral rat	6600 mg/kg (Rat)
ATE US (oral)	6600.000 mg/kg body weight
Manganese Oxysulfate	
LD50 oral rat	2150 mg/kg

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Manganese Oxysulfate	
ATE US (oral)	2150.000 mg/kg body weight

Skin corrosion/irritation	: Not classified
Serious eye damage/irritation	: Causes eye irritation.
Respiratory or skin sensitization	: May cause an allergic skin reaction.
Germ cell mutagenicity	: Not classified
	Based on available data, the classification criteria are not met
Carcinogenicity	: Suspected of causing cancer.

2,4-dichlorophenoxyacetic acid (94-75-7)	
IARC group	2B - Possibly carcinogenic to humans

mecoprop (93-65-2)	
IARC group	2B - Possibly carcinogenic to humans

Reproductive toxicity	: Not classified
	Based on available data, the classification criteria are not met
Specific target organ toxicity (single exposure)	: May cause respiratory irritation.

Specific target organ toxicity (repeated exposure)	: Not classified
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Aspiration hazard	: Not classified
-------------------	------------------

Potential Adverse human health effects and symptoms	: Based on available data, the classification criteria are not met.
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SECTION 12: Ecological information

12.1. Toxicity

Ecology - water	: ENVIRONMENTAL HAZARDS: This product is toxic to fish and aquatic invertebrates and may adversely affect non-target plants. Do not apply directly to water. Do not contaminate water when disposing of equipment washwater. This chemical has properties and characteristics associated with chemicals detected in groundwater. The use of this chemical in areas where soils are permeable, particularly where the water table is shallow, any results in groundwater contamination. Application around a cistern or well may result in contamination of drinking water or groundwater.
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2,4-dichlorophenoxyacetic acid (94-75-7)	
LC50 fish 1	31 - 96 mg/l (96 h; Cyprinus carpio)
EC50 Daphnia 1	90 mg/l (48 h; Daphnia magna)
LC50 fish 2	82 mg/l 96 h; Salmo gairdneri (Oncorhynchus mykiss)
TLM fish 1	375 mg/l (48 h; Lepomis macrochirus)
Threshold limit algae 1	< 0.1 mg/l (Scenedesmus quadricauda; Chronic)
Threshold limit algae 2	26.4 mg/l (120 h; Selenastrum capricornutum; Growth rate)

mecoprop (93-65-2)	
LC50 fish 1	1100 mg/l (96 h; Pimephales promelas; GLP)
EC50 Daphnia 1	400 - 450 mg/l (48 h; Daphnia magna; AI>=90%)
EC50 other aquatic organisms 1	7.352 mg/l (240 h; Lemna minor; Growth)
LC50 fish 2	240 mg/l 96 h; Salmo gairdneri (Oncorhynchus mykiss)
Threshold limit algae 1	102.66 mg/l (96 h; Scenedesmus subspicatus; AI>=50%)
Threshold limit algae 2	220 mg/l (96 h; Chlorella sp.; AI>=50%)

dicamba (1918-00-9)	
LC50 fish 1	23 mg/l (96 h; Lepomis macrochirus)
LC50 other aquatic organisms 1	10 - 100 mg/l (96 h)
EC50 Daphnia 1	> 100 mg/l (48 h; Daphnia magna; Locomotor effect)
LC50 fish 2	28 mg/l 96 h; Salmo gairdneri (Oncorhynchus mykiss)

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dicamba (1918-00-9)	
TLM fish 1	40 ppm (48 h; <i>Lepomis macrochirus</i>)
TLM fish 2	35 ppm 48 h; <i>Salmo gairdneri</i> (<i>Oncorhynchus mykiss</i>)
Threshold limit other aquatic organisms 1	10 - 100,96 h
ammonium sulfate (7783-20-2)	
LC50 fish 1	126 mg/l (96 h; <i>Poecilia reticulata</i>)
EC50 Daphnia 1	202 mg/l (96 h; <i>Daphnia magna</i>)
LC50 fish 2	250 - 480 mg/l (96 h; <i>Brachydanio rerio</i>)
EC50 Daphnia 2	433 mg/l (50 h; <i>Daphnia magna</i>)
TLM fish 1	1290 ppm (96 h; <i>Gambusia affinis</i>)
Monoammonium Phosphate (7722-76-1)	
LC50 fish 1	155 ppm (96 h; <i>Pimephales promelas</i>)
potassium sulfate (7778-80-5)	
LC50 fish 1	1692.4 mg/l (96 h; <i>Alburnus alburnus</i>)
LC50 other aquatic organisms 1	> 1000 mg/l (96 h)
EC50 Daphnia 1	890 mg/l (48 h; <i>Daphnia magna</i> ; Static system)
LC50 fish 2	653 - 796 mg/l (96 h; <i>Lepomis macrochirus</i>)
EC50 Daphnia 2	1180 mg/l (96 h; Crustacea)
TLM fish 1	3550 ppm (96 h; <i>Lepomis</i> sp.)
Threshold limit other aquatic organisms 1	> 1000 mg/l (96 h)
Threshold limit algae 1	2900 mg/l (72 h; <i>Scenedesmus subspicatus</i>)

12.2. Persistence and degradability

Best Turf Supreme 16-6-8 plus Trimec	
Persistence and degradability	Not established.
2,4-dichlorophenoxyacetic acid (94-75-7)	
Persistence and degradability	Readily biodegradable in water. Inhibition of nitrification. Biodegradable in the soil. No (test) data on mobility of the substance available. May cause long-term adverse effects in the environment.
mecoprop (93-65-2)	
Persistence and degradability	Not readily biodegradable in water. Biodegradable in the soil. Low potential for adsorption in soil. Photodegradation in the air.
dicamba (1918-00-9)	
Persistence and degradability	May cause long-term adverse effects in the environment.
ammonium sulfate (7783-20-2)	
Persistence and degradability	Biodegradability in water: no data available. Not established.
Monoammonium Phosphate (7722-76-1)	
Persistence and degradability	Biodegradability in water: no data available. Not established.
potassium sulfate (7778-80-5)	
Persistence and degradability	Biodegradability: not applicable. Not established.
Biochemical oxygen demand (BOD)	Not applicable
Chemical oxygen demand (COD)	Not applicable
ThOD	Not applicable
BOD (% of ThOD)	Not applicable
Iron Oxysulfate	
Persistence and degradability	Not established.
Sand	
Persistence and degradability	Not established.

12.3. Bioaccumulative potential

Best Turf Supreme 16-6-8 plus Trimec	
Bioaccumulative potential	Not established.

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2,4-dichlorophenoxyacetic acid (94-75-7)	
BCF fish 1	< 10 (3 days; Leuciscus idus)
BCF other aquatic organisms 1	6 (24 h; Algae)
Log Pow	2.58 - 2.83 (Experimental value; OECD 107: Partition Coefficient (n-octanol/water): Shake Flask Method; 25 °C)
Bioaccumulative potential	Low potential for bioaccumulation (BCF < 500). Not established.
mecoprop (93-65-2)	
BCF fish 1	1.2 - 5.5 (672 h; Lepomis macrochirus; GLP)
Log Pow	1.17 (Experimental value; OECD 107: Partition Coefficient (n-octanol/water): Shake Flask Method; 23 °C)
Bioaccumulative potential	Low potential for bioaccumulation (BCF < 500).
dicamba (1918-00-9)	
Log Pow	2.21
Bioaccumulative potential	Low potential for bioaccumulation (Log Kow < 4). Not established.
ammonium sulfate (7783-20-2)	
Log Pow	-5.1
Bioaccumulative potential	Bioaccumulation: not applicable. Not established.
Monoammonium Phosphate (7722-76-1)	
Bioaccumulative potential	Not bioaccumulative. Not established.
potassium sulfate (7778-80-5)	
Bioaccumulative potential	Not bioaccumulative. Not established.
Iron Oxysulfate	
Bioaccumulative potential	Not established.
Sand	
Bioaccumulative potential	Not established.

12.4. Mobility in soil

dicamba (1918-00-9)	
Ecology - soil	Not toxic to bees.

12.5. Other adverse effects

Effect on the global warming : No known ecological damage caused by this product.

Other information : Avoid release to the environment.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Waste disposal recommendations	: Dispose in a safe manner in accordance with local/national regulations.
Ecology - waste materials	: Avoid release to the environment.
STORAGE AND DISPOSAL	: Do not contaminate water, food or feed by storage or disposal.
PESTICIDE STORAGE	: Store this product only in its original container AND KEEP ANY BAGS CONTAINING UNUSED PRODUCT IN A LOCKED STORAGE AREA INACCESSIBLE TO CHILDREN AND DOMESTIC ANIMALS. Do not store near food or feedstuffs.
PESTICIDE DISPOSAL AND CONTAINER HANDLING	: Non-refillable container. Do not reuse or refill this container. If empty: Place in trash or offer for recycling, if available. If partly filled: Call your local solid waste agency for disposal instructions. Never place unused product down an indoor or outdoor drain.

SECTION 14: Transport information

Department of Transportation (DOT)

In accordance with DOT

Not regulated for transport

Additional information

Other information : No supplementary information available.

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ADR

No additional information available

Transport by sea

No additional information available

Air transport

No additional information available

SECTION 15: Regulatory information

15.1. US Federal regulations

All components of this product are listed, or excluded from listing, on the United States Environmental Protection Agency Toxic Substances Control Act (TSCA) inventory except for:

dicamba	CAS No 1918-00-9		
Iron Oxysulfate	CAS No		
Manganese Oxysulfate	CAS No		
Sand	CAS No		

Chemical(s) subject to the reporting requirements of Section 313 or Title III of the Superfund Amendments and Reauthorization Act (SARA) of 1986 and 40 CFR Part 372.

2,4-dichlorophenoxyacetic acid	CAS No 94-75-7		
mecoprop	CAS No 93-65-2		
dicamba	CAS No 1918-00-9		

2,4-dichlorophenoxyacetic acid (94-75-7)

Listed on United States SARA Section 313

Not listed on the United States SARA Section 313

RQ (Reportable quantity, section 304 of EPA's List of Lists)	100 lb		
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mecoprop (93-65-2)

Listed on United States SARA Section 313

dicamba (1918-00-9)

Listed on United States SARA Section 313

RQ (Reportable quantity, section 304 of EPA's List of Lists)	1000 lb		
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15.2. International regulations

CANADA

No additional information available

EU-Regulations

No additional information available

Classification according to Regulation (EC) No. 1272/2008 [CLP]

No additional information available

Classification according to Directive 67/548/EEC [DSD] or 1999/45/EC [DPD]

Not classified

Best Turf Supreme 16-6-8 plus Trimec

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

National regulations

Best Turf Supreme 16-6-8 plus Trimec

This chemical is a pesticide product registered by the United States Environmental Protection Agency and is subject to certain labeling requirements under federal pesticide law. These requirements differ from the classification criteria and hazard information required for safety data sheets (SDS), and for workplace labels of non-pesticide chemicals. The hazard information required on the pesticide label is reproduced below. The pesticide label also includes other important information, including directions for use.

PRECAUTIONARY STATEMENTS HAZARDS TO HUMANS AND DOMESTIC ANIMALS CAUTION: Causes moderate eye irritation. Harmful if inhaled. Avoid contact with eyes or clothing. Avoid breathing dust. Wash thoroughly with soap and water after handling. Remove contaminated clothing and wash before reuse. Prolonged or frequent repeated skin contact while handling the material may cause allergic reaction in some individuals.

15.3. US State regulations

2,4-dichlorophenoxyacetic acid (94-75-7)

U.S. - Massachusetts - Right To Know List
U.S. - New Jersey - Right to Know Hazardous Substance List
U.S. - Pennsylvania - RTK (Right to Know) List

mecoprop (93-65-2)

U.S. - New Jersey - Right to Know Hazardous Substance List

dicamba (1918-00-9)

U.S. - Massachusetts - Right To Know List
U.S. - New Jersey - Right to Know Hazardous Substance List
U.S. - Pennsylvania - RTK (Right to Know) List

SECTION 16: Other information

Data sources : REGULATION (EC) No 1272/2008 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 16 December 2008 on classification, labeling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006.

Other information : None.

Full text of H-phrases:

Acute Tox. 4 (Dermal)	Acute toxicity (dermal) Category 4
Acute Tox. 4 (Oral)	Acute toxicity (oral) Category 4
Aquatic Acute 1	Hazardous to the aquatic environment - Acute Hazard Category 1
Aquatic Chronic 1	Hazardous to the aquatic environment - Chronic Hazard Category 1
Aquatic Chronic 3	Hazardous to the aquatic environment - Chronic Hazard Category 3
Carc. 2	Carcinogenicity Category 2
Eye Dam. 1	Serious eye damage/eye irritation Category 1
Eye Irrit. 2B	Serious eye damage/eye irritation Category 2B
Skin Irrit. 2	Skin corrosion/irritation Category 2
Skin Sens. 1	Skin sensitization Category 1
STOT SE 3	Specific target organ toxicity (single exposure) Category 3
H302	Harmful if swallowed
H312	Harmful in contact with skin
H315	Causes skin irritation
H317	May cause an allergic skin reaction
H318	Causes serious eye damage
H320	Causes eye irritation
H335	May cause respiratory irritation
H351	Suspected of causing cancer
H400	Very toxic to aquatic life
H410	Very toxic to aquatic life with long lasting effects
H412	Harmful to aquatic life with long lasting effects

Best Turf Supreme 16-6-8 plus Trimec

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SDS US (GHS HazCom 2012)

Disclaimer: This information relates to the specific material designated and may not be valid for such material used in combination with any other materials or in any process. Such information is to the best of our knowledge and belief, accurate and reliable as of the date compiled. However, no representation, warranty or guarantee is made as to its accuracy, reliability or completeness. NO WARRANTY OF MERCHANTABILITY, FITNESS FOR ANY PARTICULAR PURPOSE, OR ANY OTHER WARRANTY, EXPRESS OR IMPLIED, IS MADE CONCERNING THE INFORMATION HEREIN PROVIDED. It is the user's responsibility to satisfy himself as to the suitability and completeness of such information for his own particular use. We do not accept liability for any loss or damage that may occur from the use of this information nor do we offer warranty against patent infringement.



X-Cote 43-0-0

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Product form : Mixture
Product name : X-Cote 43-0-0
Product code : M74100

1.2. Relevant identified uses of the substance or mixture and uses advised against

1.3. Details of the supplier of the safety data sheet

JR Simplot Company
Boise, ID 83707
T 1-208-336-2110

1.4. Emergency telephone number

Emergency number : CHEMTREC 1-800-424-9300

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

GHS-US classification

Skin Irrit. 2 H315
Eye Irrit. 2B H320
STOT SE 3 H335

Full text of H-phrases: see section 16

2.2. Label elements

GHS-US labelling

Hazard pictograms (GHS-US) :



GHS07

Signal word (GHS-US) :

Warning

Hazard statements (GHS-US) :

H315 - Causes skin irritation
H320 - Causes eye irritation
H335 - May cause respiratory irritation

Precautionary statements (GHS-US) :

P261 - Avoid breathing dust/fume/gas/mist/vapours/spray
P264 - Wash ... thoroughly after handling
P271 - Use only outdoors or in a well-ventilated area
P280 - Wear protective gloves/protective clothing/eye protection/face protection
P302+P352 - If on skin: Wash with plenty of water/...
P304+P340 - If inhaled: Remove person to fresh air and keep comfortable for breathing
P305+P351+P338 - If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P312 - Call a poison center/doctor/... if you feel unwell
P321 - Specific treatment (see ... on this label)
P332+P313 - If skin irritation occurs: Get medical advice/attention
P337+P313 - If eye irritation persists: Get medical advice/attention
P362 - Take off contaminated clothing and wash before reuse
P403+P233 - Store in a well-ventilated place. Keep container tightly closed
P405 - Store locked up
P501 - Dispose of contents/container to ...in accordance with local/regional/national regulations

2.3. Other hazards

No additional information available

2.4. Unknown acute toxicity (GHS-US)

No data available

X-Cote 43-0-0

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SECTION 3: Composition/information on ingredients

3.1. Substance

Not applicable

3.2. Mixture

Name	Product identifier	%	GHS-US classification
urea	(CAS No) 57-13-6		Skin Irrit. 2, H315 Eye Irrit. 2B, H320 STOT SE 3, H335
sulfur	(CAS No) 7704-34-9		Skin Irrit. 2, H315 Eye Irrit. 2B, H320
Polymer Coating			Not classified
wax (paraffins- petroleum)	(CAS No) 64771-72-8		Not classified

*ingredients without WT% are considered proprietary based on trade secrets

SECTION 4: First aid measures

4.1. Description of first aid measures

- First-aid measures general : Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label where possible).
- First-aid measures after inhalation : Remove to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER/doctor/physician if you feel unwell.
- First-aid measures after skin contact : Wash with plenty of soap and water. Wash contaminated clothing before reuse. If skin irritation occurs: Get medical advice/attention. Specific treatment (see ... on this label).
- First-aid measures after eye contact : IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
- First-aid measures after ingestion : Rinse mouth. Do NOT induce vomiting. Obtain emergency medical attention.

4.2. Most important symptoms and effects, both acute and delayed

- Symptoms/injuries after inhalation : May cause respiratory irritation.
- Symptoms/injuries after skin contact : Causes skin irritation.
- Symptoms/injuries after eye contact : Causes eye irritation.

4.3. Indication of any immediate medical attention and special treatment needed

No additional information available

SECTION 5: Firefighting measures

5.1. Extinguishing media

- Suitable extinguishing media : Foam. Dry powder. Carbon dioxide. Water spray. Sand.
- Unsuitable extinguishing media : Do not use a heavy water stream.

5.2. Special hazards arising from the substance or mixture

No additional information available

5.3. Advice for firefighters

- Firefighting instructions : Use water spray or fog for cooling exposed containers. Exercise caution when fighting any chemical fire. Prevent fire-fighting water from entering environment.
- Protection during firefighting : Do not enter fire area without proper protective equipment, including respiratory protection.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

- Emergency procedures : Evacuate unnecessary personnel.

6.1.2. For emergency responders

- Protective equipment : Equip cleanup crew with proper protection.
- Emergency procedures : Ventilate area.

6.2. Environmental precautions

Prevent entry to sewers and public waters. Notify authorities if liquid enters sewers or public waters.

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6.3. Methods and material for containment and cleaning up

Methods for cleaning up : On land, sweep or shovel into suitable containers. Minimize generation of dust. Store away from other materials.

6.4. Reference to other sections

See Heading 8. Exposure controls and personal protection.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling : Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Provide good ventilation in process area to prevent formation of vapour. Avoid breathing dust/fume/gas/mist/vapours/spray. Use only outdoors or in a well-ventilated area.

Hygiene measures : Wash ... thoroughly after handling.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions : Keep only in the original container in a cool, well ventilated place away from : Keep container tightly closed.

Incompatible products : Strong bases. Strong acids.

Incompatible materials : Sources of ignition. Direct sunlight.

7.3. Specific end use(s)

No additional information available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

sulfur (7704-34-9)		
USA ACGIH	ACGIH TWA (mg/m ³)	3 mg/m ³

8.2. Exposure controls

Personal protective equipment : Avoid all unnecessary exposure.
Hand protection : Wear protective gloves.
Eye protection : Chemical goggles or safety glasses.
Skin and body protection : Wear suitable protective clothing.
Respiratory protection : Wear appropriate mask.
Other information : Do not eat, drink or smoke during use.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state : Solid
Appearance : Granule.
Colour : Dark
Odour : characteristic
Odour threshold : No data available
pH : No data available
Relative evaporation rate (butylacetate=1) : No data available
Melting point : No data available
Freezing point : No data available
Boiling point : No data available
Flash point : No data available
Auto-ignition temperature : No data available
Decomposition temperature : No data available
Flammability (solid, gas) : No data available
Vapour pressure : No data available
Relative vapour density at 20 °C : No data available
Relative density : No data available
Solubility : Slowly soluble, coating insoluble.

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Log Pow : No data available
Log Kow : No data available
Viscosity, kinematic : No data available
Viscosity, dynamic : No data available
Explosive properties : No data available
Oxidising properties : No data available
Explosive limits : No data available

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

No additional information available

10.2. Chemical stability

Not established.

10.3. Possibility of hazardous reactions

Not established.

10.4. Conditions to avoid

Direct sunlight. Extremely high or low temperatures.

10.5. Incompatible materials

Strong acids. Strong bases.

10.6. Hazardous decomposition products

fume. Carbon monoxide. Carbon dioxide.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity : Not classified

urea (57-13-6)	
LD50 oral rat	8471 mg/kg (Rat)
LD50 dermal rat	> 3200 mg/kg (Rat)
LD50 dermal rabbit	> 21000 mg/kg (Rabbit)
ATE US (oral)	8471.00000000 mg/kg bodyweight

wax (paraffins- petroleum) (64771-72-8)	
LD50 oral rat	> 5000 mg/kg (Rat)
LD50 dermal rabbit	> 2000 mg/kg (Rabbit)

sulfur (7704-34-9)	
LD50 oral rat	> 5000 mg/kg (Rat)
LD50 dermal rabbit	> 2000 mg/kg (Rabbit)
LC50 inhalation rat (mg/l)	> 9.23 mg/l/4h (Rat)

Skin corrosion/irritation : Causes skin irritation.
Serious eye damage/irritation : Causes eye irritation.
Respiratory or skin sensitisation : Not classified
Germ cell mutagenicity : Not classified
Carcinogenicity : Not classified
Reproductive toxicity : Not classified
Specific target organ toxicity (single exposure) : May cause respiratory irritation.

Specific target organ toxicity (repeated exposure) : Not classified

Aspiration hazard : Not classified

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Potential adverse human health effects and symptoms	: Based on available data, the classification criteria are not met.
Symptoms/injuries after inhalation	: May cause respiratory irritation.
Symptoms/injuries after skin contact	: Causes skin irritation.
Symptoms/injuries after eye contact	: Causes eye irritation.

SECTION 12: Ecological information

12.1. Toxicity

urea (57-13-6)	
LC50 fishes 1	> 6810 mg/l (96 h; <i>Leuciscus idus</i>)
EC50 Daphnia 1	> 10000 mg/l (48 h; <i>Daphnia magna</i>)
LC50 fish 2	17500 mg/l (96 h; <i>Poecilia reticulata</i>)
EC50 Daphnia 2	> 10000 mg/l (24 h; <i>Daphnia magna</i>)
TLM fish 1	17500 ppm (96 h; <i>Poecilia reticulata</i>)
Threshold limit other aquatic organisms 1	120000 mg/l (16 h; Bacteria; Toxicity test)
Threshold limit other aquatic organisms 2	> 10000 mg/l (<i>Pseudomonas putida</i>)
Threshold limit algae 2	> 10000 mg/l (168 h; <i>Scenedesmus quadricauda</i>)

sulfur (7704-34-9)	
LC50 fishes 1	866 mg/l (96 h; <i>Brachydanio rerio</i>)
LC50 fish 2	> 100 mg/l 96 h; <i>Salmo gairdneri</i> (<i>Oncorhynchus mykiss</i>)
TLM fish 1	10000 ppm (96 h; <i>Gambusia affinis</i>)
Threshold limit other aquatic organisms 1	> 10000 mg/l (24 h; <i>Daphnia magna</i>)

12.2. Persistence and degradability

X-Cote 43-0-0	
Persistence and degradability	Not established.

urea (57-13-6)	
Persistence and degradability	Inherently biodegradable. Hydrolysis in water. Not established.
ThOD	0.27 g O ₂ /g substance

wax (paraffins- petroleum) (64771-72-8)	
Persistence and degradability	Readily biodegradable in water.

sulfur (7704-34-9)	
Persistence and degradability	Biodegradability: not applicable. Biodegradability in soil: not applicable. Adsorbs into the soil. Not established.
Biochemical oxygen demand (BOD)	Not applicable
Chemical oxygen demand (COD)	Not applicable
ThOD	Not applicable
BOD (% of ThOD)	Not applicable

12.3. Bioaccumulative potential

X-Cote 43-0-0	
Bioaccumulative potential	Not established.

urea (57-13-6)	
BCF fish 1	1 (72 h; <i>Brachydanio rerio</i> ; Fresh water)
BCF other aquatic organisms 1	11700 (<i>Chlorella</i> sp.)
Log Pow	-2.59 - -1.59
Bioaccumulative potential	Bioaccumulation: not applicable. Not established.

wax (paraffins- petroleum) (64771-72-8)	
Bioaccumulative potential	No bioaccumulation data available.

sulfur (7704-34-9)	
Log Pow	0.23 (Estimated value)
Bioaccumulative potential	Low potential for bioaccumulation (Log Kow < 4). Not established.

12.4. Mobility in soil

X-Cote 43-0-0

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

sulfur (7704-34-9)	
Ecology - soil	Not toxic to bees.

12.5. Other adverse effects

Effect on ozone layer : No additional information available
Effect on the global warming : No known ecological damage caused by this product.
Other information : Avoid release to the environment.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Waste disposal recommendations : Dispose in a safe manner in accordance with local/national regulations.
Ecology - waste materials : Avoid release to the environment.

SECTION 14: Transport information

In accordance with DOT
Not regulated for transport

Additional information

Other information : No supplementary information available.

ADR

Transport document description :

Transport by sea

No additional information available

Air transport

No additional information available

SECTION 15: Regulatory information

15.1. US Federal regulations

All components of this product are listed, or excluded from listing, on the United States Environmental Protection Agency Toxic Substances Control Act (TSCA) inventory except for:

wax (paraffins- petroleum)	CAS No 64771-72-8	
Polymer Coating	CAS No	

This product or mixture does not contain a toxic chemical or chemicals in excess of the applicable de minimis concentration as specified in 40 CFR §372.38(a) subject to the reporting requirements of section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372.

15.2. International regulations

CANADA

No additional information available

EU-Regulations

No additional information available

Classification according to Regulation (EC) No. 1272/2008 [CLP]

Classification according to Directive 67/548/EEC or 1999/45/EC

Not classified

15.2.2. National regulations

No additional information available

15.3. US State regulations

California Proposition 65 - This product does not contain any substances known to the state of California to cause cancer and/or reproductive harm

sulfur (7704-34-9)
U.S. - New Jersey - Right to Know Hazardous Substance List

X-Cote 43-0-0

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SECTION 16: Other information

Other information

:
: None.

Full text of H-phrases: see section 16:

Eye Irrit. 2B	Serious eye damage/eye irritation, Category 2B
Skin Irrit. 2	Skin corrosion/irritation, Category 2
STOT SE 3	Specific target organ toxicity — Single exposure, Category 3, Respiratory tract irritation
H315	Causes skin irritation
H320	Causes eye irritation
H335	May cause respiratory irritation

SDS US (GHS HazCom 2012) - Custom

Disclaimer: This information relates to the specific material designated and may not be valid for such material used in combination with any other materials or in any process. Such information is to the best of our knowledge and belief, accurate and reliable as of the date compiled. However, no representation, warranty or guarantee is made as to its accuracy, reliability or completeness. NO WARRANTY OF MERCHANTABILITY, FITNESS FOR ANY PARTICULAR PURPOSE, OR ANY OTHER WARRANTY, EXPRESS OR IMPLIED, IS MADE CONCERNING THE INFORMATION HEREIN PROVIDED. It is the user's responsibility to satisfy himself as to the suitability and completeness of such information for his own particular use. We do not accept liability for any loss or damage that may occur from the use of this information nor do we offer warranty against patent infringement.





Material Safety Data Sheet

**BAYER ADVANCED ALL-IN-ONE ROSE & FLOWER CARE
READY-TO-USE GRANULES**

MSDS Number: 102000021105
MSDS Version 1.0
Revision Date: 06/04/2010

SECTION 1. CHEMICAL PRODUCT AND COMPANY INFORMATION

Product name BAYER ADVANCED ALL-IN-ONE ROSE & FLOWER CARE READY-TO-USE GRANULES
MSDS Number 102000021105
EPA Registration No. 72155-94

Bayer Environmental Science
2 T.W. Alexander Drive
Research Triangle PK, NC 27709
USA

For MEDICAL, TRANSPORTATION or other EMERGENCY call: 1-800-334-7577 (24 hours/day)
For Product Information call: 1-800-331-2867

SECTION 2. HAZARDS IDENTIFICATION

NOTE: Please refer to Section 11 for detailed toxicological information.

Emergency Overview Caution! Harmful if swallowed or absorbed through skin. Causes eye irritation. Avoid contact with skin, eyes and clothing. Wash thoroughly with soap and water after handling.

Physical State granular

Appearance dark brown

Exposure routes Skin contact, Eye contact, Ingestion

Immediate Effects

Eye Causes eye irritation. Avoid contact with eyes.

Skin May cause irritation. Avoid contact with skin and clothing.

Ingestion Harmful if swallowed. Do not take internally.

Inhalation Inhalation not likely. Avoid breathing dust.

Medical Conditions Aggravated by Exposure No specific medical conditions are known which may be aggravated by exposure to this product.

Potential Environmental Effect Toxic to aquatic invertebrates.



Material Safety Data Sheet

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READY-TO-USE GRANULES**

MSDS Number: 102000021105
MSDS Version 1.0

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

<u>Hazardous Component Name</u>	<u>CAS-No.</u>	<u>Average % by Weight</u>
Tebuconazole	107534-96-3	1.06
Imidacloprid	138261-41-3	0.11
Clothianidin	210880-92-5	0.05

SECTION 4. FIRST AID MEASURES

General	When possible, have the product container or label with you when calling a poison control center or doctor or going for treatment.
Eye	Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Call a physician or poison control center immediately.
Skin	Take off contaminated clothing and shoes immediately. Wash off immediately with plenty of water for at least 15 minutes. Call a physician or poison control center immediately.
Ingestion	Call a physician or poison control center immediately. Rinse out mouth and give water in small sips to drink. DO NOT induce vomiting unless directed to do so by a physician or poison control center. Never give anything by mouth to an unconscious person. Do not leave victim unattended.
Inhalation	Move to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth if possible. Call a physician or poison control center immediately.
Notes to physician Treatment	Treat symptomatically. There is no specific antidote.

SECTION 5. FIRE FIGHTING MEASURES

Flash point	not applicable
Fire and Explosion Hazards	Dangerous gases are evolved in the event of a fire. Accumulation of fine dust may entail the risk of a dust explosion in the presence of air.
Suitable extinguishing media	Water, Carbon dioxide (CO2), Dry chemical, Foam



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**BAYER ADVANCED ALL-IN-ONE ROSE & FLOWER CARE
READY-TO-USE GRANULES**

MSDS Number: 102000021105
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Fire Fighting Instructions Keep out of smoke. Fight fire from upwind position. Do not allow run-off from fire fighting to enter drains or water courses.

Firefighters should wear NIOSH approved self-contained breathing apparatus and full protective clothing.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions Keep unauthorized people away. Isolate hazard area. Avoid contact with spilled product or contaminated surfaces.

Methods for cleaning up Avoid dust formation. Sweep up or vacuum up spillage and collect in suitable container for disposal. Clean contaminated floors and objects thoroughly, observing environmental regulations.

Additional advice Use personal protective equipment.

SECTION 7. HANDLING AND STORAGE

Handling procedures Handle and open container in a manner as to prevent spillage.

Storing Procedures Store in a cool, dry place and in such a manner as to prevent cross contamination with other crop protection products, fertilizers, food, and feed. Store in original container and out of the reach of children, preferably in a locked storage area.

Work/Hygienic Procedures Remove Personal Protective Equipment (PPE) immediately after handling this product. Before removing gloves clean them with soap and water. Wash thoroughly and put on clean clothing.

Wash hands thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco, using the toilet or applying cosmetics.

SECTION 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

General Protection There are no known hazards associated with this product when used according to the label directions. The following guidelines should be followed.

Avoid breathing dust. Avoid contact with skin and eyes.

Do not allow children or pets to enter the treated area until granules have been watered into the soil and the grass or soil is dry.



Material Safety Data Sheet

**BAYER ADVANCED ALL-IN-ONE ROSE & FLOWER CARE
READY-TO-USE GRANULES**

MSDS Number: 102000021105
MSDS Version 1.0

Eye/Face Protection	Safety glasses with side-shields
Hand protection	Chemical resistant nitrile rubber gloves
Body Protection	Wear long-sleeved shirt and long pants and shoes plus socks.

Exposure Limits

Tebuconazole	107534-96-3	OES BCS*	TWA	0.2 mg/m3
Imidacloprid	138261-41-3	OES BCS*	TWA	0.7 mg/m3
Clothianidin	210880-92-5	OES BCS*	TWA	2.8 mg/m3

*OES BCS: Internal Bayer CropScience "Occupational Exposure Standard"

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	dark brown
Physical State	granular
pH	ca. 5.8 (10 %)
Bulk density	ca. 75 - 85 lb/ft ³

SECTION 10. STABILITY AND REACTIVITY

Conditions to avoid	Heat, flames and sparks.
Hazardous Decomposition Products	Thermal decomposition Hydrogen chloride (HCl) Hydrogen cyanide (hydrocyanic acid) Carbon monoxide nitrogen oxides (NOx) ammonia biuret cyanuric acid oxides of iron oxides of magnesium oxides of manganese Oxides of phosphorus oxides of potassium formaldehyde Sulphur oxides
Chemical Stability	Stable under recommended storage conditions.



Material Safety Data Sheet

**BAYER ADVANCED ALL-IN-ONE ROSE & FLOWER CARE
READY-TO-USE GRANULES**

MSDS Number: 102000021105
MSDS Version 1.0

SECTION 11. TOXICOLOGICAL INFORMATION

Acute toxicity studies have not been conducted on this product as formulated. The acute toxicity data provided has been bridged from a similar product, Merit 0.5% on 32-5-7 Granular Fertilizer. The non-acute information pertains to the active ingredients.

Acute oral toxicity male/female combined rat: LD50: > 5,136 mg/kg

Acute dermal toxicity male/female combined rat: LD50: > 2,000 mg/kg

Acute inhalation toxicity male/female combined rat: LC50: > 5.016 mg/l
Exposure time: 4 h
Determined in the form of dust.
(actual)

male/female combined rat: LC50: > 20 mg/l
Exposure time: 1 h
Determined in the form of dust.
Extrapolated from the 4 hr LC50.
(actual)

Skin irritation rabbit: Mild skin irritation.

Eye irritation rabbit: Mild eye irritation.

Sensitisation guinea pig: Non-sensitizing.

Chronic toxicity Tebuconazole caused liver, spleen, adrenal and/or eye effects at high doses in chronic studies in rats and dogs.

Imidacloprid caused thyroid and/or liver effects in chronic dietary studies in rats and dogs.

Clothianidin caused effects in the liver, kidney and/or ovaries following chronic exposure to high doses in mice, rats and dogs.

Assessment Carcinogenicity

Tebuconazole is classified by EPA as a Group C carcinogen (possible human carcinogen) based on liver tumors in mice and no evidence of carcinogenicity in rats. As the liver tumors were seen only at a dose exceeding a Maximum Tolerated Dose (MTD), no significant carcinogenic risk is posed for human exposure.

Imidacloprid was not carcinogenic in studies in rats and mice.

Clothianidin was not carcinogenic in lifetime feeding studies in rats and mice.

ACGIH



Material Safety Data Sheet

BAYER ADVANCED ALL-IN-ONE ROSE & FLOWER CARE READY-TO-USE GRANULES

MSDS Number: 102000021105
MSDS Version 1.0

None.
NTP
None.
IARC
None.
OSHA
None.

Reproductive toxicity

REPRODUCTION: Tebuconazole is not considered a primary reproductive toxicant in rats. Reproductive effects (e.g., smaller litters) were observed at the highest concentration but were considered secondary to maternal toxicity.

Imidacloprid was not a reproductive toxicant in a multi-generation study in rats.

Clothianidin is not considered a reproductive toxicant at non-maternally toxic dose levels.

DEVELOPMENTAL TOXICITY: Tebuconazole is not considered a primary developmental toxicant in laboratory animals. Developmental effects were observed only at doses that caused maternal toxicity.

Imidacloprid is not considered a primary developmental toxicant in rats and rabbits. Developmental effects were observed at doses that caused maternal toxicity.

Clothianidin was not a primary developmental toxicant in rats and rabbits. Developmental effects were observed in rabbits but were considered secondary to maternal toxicity.

Neurotoxicity

Tebuconazole caused only transient neurobehavioral effects (e.g., decreased motor activity) in acute, subchronic and/or developmental neurotoxicity studies in rats.

Imidacloprid showed slight behavioral and activity changes only at the highest dose tested in neurotoxicity studies in rats. There were no correlating morphological changes observed in the neural tissues.

Clothianidin was not a neurotoxicant in acute, subchronic and developmental neurotoxicity screening studies in rats.

Mutagenicity

Tebuconazole was not mutagenic or genotoxic in a battery of in vitro and in vivo tests.

Imidacloprid was not mutagenic or genotoxic based on the overall weight of evidence in a battery of in vitro and in vivo tests.

Clothianidin was not genotoxic based on the overall weight of evidence in a battery of in vitro and in vivo tests.



Material Safety Data Sheet

**BAYER ADVANCED ALL-IN-ONE ROSE & FLOWER CARE
READY-TO-USE GRANULES**

MSDS Number: 102000021105
MSDS Version 1.0

SECTION 12. ECOLOGICAL INFORMATION

Environmental precautions Do not apply directly to water, to areas where surface water is present or to intertidal areas below the mean high water mark. Do not contaminate surface or ground water by cleaning equipment or disposal of wastes, including equipment wash water. Apply this product as specified on the label. Do not allow to get into surface water, drains and ground water.

SECTION 13. DISPOSAL CONSIDERATIONS

General Disposal Guidance Pesticide, spray mixture or rinse water that cannot be used according to label instructions may be disposed of on site or at an approved waste disposal facility.

Container Disposal Rinsed packaging may be acceptable for landfill, otherwise incineration will be required in accordance with local regulations. If burned, stay out of smoke.

RCRA Information Characterization and proper disposal of this material as a special or hazardous waste is dependent upon Federal, State and local laws and are the user's responsibility. RCRA classification may apply.

SECTION 14. TRANSPORT INFORMATION

According to national and international transport regulations this material is not classified as dangerous goods / hazardous material.

SECTION 15. REGULATORY INFORMATION

EPA Registration No. 72155-94

US Federal Regulations

TSCA list

None.

US. Toxic Substances Control Act (TSCA) Section 12(b) Export Notification (40 CFR 707, Subpt D)

None.

SARA Title III - Section 302 - Notification and Information

None.

SARA Title III - Section 313 - Toxic Chemical Release Reporting

None.

US States Regulatory Reporting

CA Prop65

This product does not contain any substances known to the State of California to cause cancer.



Material Safety Data Sheet

**BAYER ADVANCED ALL-IN-ONE ROSE & FLOWER CARE
READY-TO-USE GRANULES**

MSDS Number: 102000021105
MSDS Version 1.0

This product does not contain any substances known to the State of California to cause reproductive harm.

US State Right-To-Know Ingredients

None.

Canadian Regulations

Canadian Domestic Substance List

None.

Environmental

CERCLA

None.

Clean Water Section 307 Priority Pollutants

None.

Safe Drinking Water Act Maximum Contaminant Levels

None.

SECTION 16. OTHER INFORMATION

NFPA 704 (National Fire Protection Association):

Health - 1 Flammability - 1 Reactivity - 1 Others - none

0 = minimal hazard, 1 = slight hazard, 2 = moderate hazard, 3 = severe hazard, 4 = extreme hazard

Reason to Revise: New Material Safety Data Sheet.

Revision Date: 06/04/2010

This information is provided in good faith but without express or implied warranty. The customer assumes all responsibility for safety and use not in accordance with label instructions. The product names are registered trademarks of Bayer.



Material Safety Data Sheet

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Infosafe No™ 3NUN1

Issue Date : June 2011

ISSUED by NUFARMNZ

Product Name CUPROFIX® DISPERSS®

1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

Product Name CUPROFIX® DISPERSS®

Product Code 02601

Product Type Fungicide

Company Name Nufarm NZ

Address 6 Manu Street, Otahuhu
Auckland 2024 New Zealand

Emergency Tel. 0800 651 911

Telephone/Fax Tel: 0-9-270 4157

Number Fax: 0-9-270 4159

Email www.nufarm.co.nz

→ Recommended Use A Bordeaux mixture fungicide formulated into a neutral pH water dispersible granule for disease control in fruit crops.

Other Information This SDS describes, to the best of our knowledge, the properties of the concentrated product. The physical properties and some of the assessments do not apply to the properties of the product once it has been diluted for application. Acute health effects of the diluted product are likely to be much less severe.

2. HAZARDS IDENTIFICATION

Hazard

Classification Classified as Dangerous Goods according to the LTSA New Zealand.

Risk Phrase(s)

Other Information 6.1E acute toxicant, 6.3A skin irritant, 6.4A eye irritant, 6.9B target organ toxicant, 9.1A aquatic toxicant,
TOXICITY
Harmful - may be harmful if swallowed, inhaled or absorbed through the skin. May cause skin and eye irritation. May cause liver damage from repeated oral exposure at high doses.
ECOTOXIC
Very toxic to aquatic organisms.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Solid

Characterization

Ingredients

Name	CAS	Proportion
Naphthalene sulfonic acid polymer with formaldehyde, sodium salt	9084-06-4	<15%
Sodium xylene sulfonate	1300-72-7	<15%
Kaolin clay	1332-58-7	<20%
Copper as Bordeaux mixture	8011-63-0	200g/kg

4. FIRST AID MEASURES

First Aid Measures For advice contact the National Poisons Centre 0800 POISON (0800 764 766) or a doctor immediately. Begin artificial respiration if the victim is not breathing. Use mouth-to-nose rather than mouth-to-mouth. Obtain medical attention.

Inhalation Remove patient to fresh air. Lay down and keep warm and rested. If breathing is shallow or has stopped ensure airway is clear and apply resuscitation. Seek medical assistance immediately.

Ingestion Never give anything by mouth to an unconscious person. If swallowed do NOT induce vomiting. For advice, contact the National Poisons Centre (0800 764 766). Seek medical assistance immediately.

Skin Immediately flush body and clothes with large amounts of water. Remove contaminated clothing and footwear. Wash affected areas with soap and water.



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Product Name CUPROFIX® DISPERS®

Eye If a large area is affected seek medical assistance.
Flush eyes with plenty of water for 15 minutes holding eyelids open if necessary. Seek medical assistance.

First Aid Facilities Facilities storing or utilizing this material should be equipped with an eyewash facility and safety shower.

Advice to Doctor Treat symptomatically. Copper salts may be corrosive to the oesophagus. Do NOT induce vomiting. If spontaneous vomiting has occurred or is suspected, gastric intubation is contraindicated. In cases of severe intoxication, consider chelation therapy with dimercaprol (BAL).

5. FIRE FIGHTING MEASURES

Suitable Extinguishing Media Choose extinguishing media to suit the burning material.
Water fog, foam, carbon dioxide or dry chemical.

Hazards from Combustion Products If involved in a major fire, could evolve oxides of copper or sulphur, calcium sulphate and water.

Special Protective Equipment for fire fighters Full protective clothing and self-contained breathing apparatus.

Specific Methods Keep up wind. Do not allow washings to reach sewage or effluent systems.

Hazchem Code 2X

Other Information Location Certificate: Not applicable
Hazardous Atmosphere Zone: Not applicable
Number of Fire Extinguishers: Not applicable

6. ACCIDENTAL RELEASE MEASURES

Spills & Disposal Wear protective clothing. Clear area of unprotected personnel. Sweep up solids without generating dust. Contain and absorb liquid spills with inert material and place in waste containers. If spill does enter waterways contact the local authority. Collect in an appropriate sealable container for disposal in an approved landfill.

Personal Protection For appropriate personal protective equipment (PPE), refer Section 8.

Environmental Precautions Prevent from entering drains, waterways or sewers.

7. HANDLING AND STORAGE

Precautions for Safe Handling Avoid skin and eye contact and inhalation of spray mist or dust.
APPROVED HANDLER: This product must be under the control of an approved handler if applied in a wide dispersive manner, or used by a commercial contractor.
TRACKING: Is not required
RECORD KEEPING: Records of use as described in NZS 8409 Management of Agrichemicals must be kept if 3kg or more is applied within 24 hours.

Conditions for Safe Storage Keep out of reach of children.
Store in original container tightly closed and in a locked, dry, cool area away from foodstuffs. Storage must be in accordance with NZS 8409 Management of Agrichemicals.
Stores containing 100kg of CUPROFIX DISPERS are subject to signage, and more than 100kg require emergency response plans.

Other Information Always read the label and any attached leaflet before use.
Aggregate Storage Volume Thresholds:
When stored with substances of the same hazard classification the aggregate quantity must be considered. For full details refer to the current NZS8409 Management of Agrichemicals and the HSNO Regulations.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

National Exposure Standards No exposure limits (WES, TEL or EEL's) have been specifically assigned for this product.
WES TWA for Dust and mists, as Cu = 1mg/m³

Engineering Controls Handle in well ventilated areas, generally natural ventilation is adequate.
Avoid generating and inhaling dusts.

Personal Protective Equipment When opening the container, preparing spray and using the prepared spray wear safety goggles, waterproof gloves, washable hat, cotton overalls buttoned to



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ISSUED by NUFARMNZ

Product Name CUPROFIX® DISPERS®

Hygiene Measures the neck and wrist, and boots.
Do not eat, drink or smoke while using.
Remove protective clothing and wash hands and face thoroughly before meals and after work. Wash protective clothing daily after work.

9. PHYSICAL AND CHEMICAL PROPERTIES

Form Solid
Appearance Blue-green microgranules
Solubility in Water Disperses in water. Not soluble.
pH Value 7.0 - 7.5 (dispersed at 1%)
Vapour Pressure Negligable
Density 1000kg/m³ (natural), 650g/L(tapped)
Flammability Non combustible material.
Other Information (WG) Water Dispersible Granule

10. STABILITY AND REACTIVITY

Chemical Stability When stored appropriately this product should show no significant degradation for 2 years from the date of manufacture.
Incompatible Materials Avoid contact with strong acids, iron, aluminium and its alloys.
Hazardous Decomposition Products Thermal decomposition products include: copper oxide, calcium sulphate and water.
Hazardous Polymerization Hazardous polymerisation will not occur.

11. TOXICOLOGICAL INFORMATION

Inhalation Not a likely route of exposure due to the physical form of the product. However, care should be taken to avoid the inhalation of excessive amounts of spray mist during field spraying, respiratory irritation may occur. Inhalation may be harmful.

Ingestion Not a likely route of exposure. Possible symptoms of exposure of the concentrate include: vomiting, stomach pains, symptoms attributed to the central nervous system and kidneys, and hemolytic crisis accompanied by damage in the liver and brain.

Skin The concentrated product may cause slight irritation on contact.

Eye The concentrate may cause irritation of the eyes unless washed off immediately.

Chronic Effects Prolonged contact may give rise to some skin diseases especially if small cuts, scratches or abrasions are present or if irritation by contaminated clothing occurs. Elementary hygiene precautions will avoid these risks.
Copper Sulphate:
Workers exposed by inhalation have reported irritation of the nose and throat, occasional ulceration of the nasal septum, and inflammation and diffuse fibrosis of the lungs. Humans exposed to high levels in drinking water have experienced abdominal pain, vomiting, diarrhea, nausea, and a metallic taste in the mouth.

Acute Toxicity - Oral LD50 (rat) >2,000 mg/kg

Acute Toxicity - Dermal LD50 (rat) >4,000mg/kg

Acute Toxicity - Inhalation LC50 (rat) (4hr) 1.97 (male) - 2.02 (female) mg/l

Eye Irritation Irritant (rabbit)

Skin Irritation Irritant

Skin Sensitisation Not a skin sensitiser (Guinea pig)

Other Information The Australian Acceptable Daily Intake (ADI) for copper for a human is 0.2 mg/kg/day, set for the public for daily, lifetime exposure. There is no NOEL



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Product Name CUPROFIX® DISPERS®

or LOEL or safety factor. (Ref: Comm. Dept. of Health and Ageing Office of Chemical Safety and Environmental Health, 'ADI List', March 2010).

12. ECOLOGICAL INFORMATION

Environmental Fate	For copper sulfate: The bioconcentration factor (BCF) in fish is 10-100, indicating a low potential for bioconcentration. The BCF is higher in molluscs, especially oysters, where it may reach 30,000. the biomagnification ration in fish is less than 1, indicting no biomagnification in the food chain. No bioaccumulation was obtained from a study of pollutant concentrations in the muscle and livers of 10 mammal species and no evidence of biomagnification in the food chain was observed.
Environ. Protection	Copper sprays can cause injury to tender foliage or hasten leaf fall..
Basis for Assessment	Data below is for the active ingredient unless otherwise stated.
Acute Toxicity - Fish	LC50 (96hr) for rainbow trout is 0.18 mg/l for copper hydroxide sulphate (active)
Acute Toxicity - Daphnia	LC50 (48hr) for daphnia is 0.089 mg/l for copper hydroxide sulphate (active).
Acute Toxicity - Algae	EC50 (96h) Phaeodactylum tricornutum(diatom) is 0.1 - 2ppm for copper hydroxide sulfate (active)
Acute Toxicity - Other Organisms	Not toxic to bees. LD50 (14d) colinus virginianus (northern bobwhite quail) <135mg/kg Acute LD50 (rat) 100mg/kg bw

13. DISPOSAL CONSIDERATIONS

Product Disposal	Dispose of product only by using according to the label, or at an approved landfill.
Container Disposal	Ensure container is completely empty. Burn in an appropriate incinerator if circumstances, such as wind direction, permit. Otherwise crush and bury in an appropriate landfill.

14. TRANSPORT INFORMATION

Transport Information	It is good practice not to transport agricultural chemical products with food, food related materials and animal feedstuffs.
U.N. Number	3077
Proper Shipping Name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. - (copper, 20%)
DG Class	9
Hazchem Code	2X
Packaging Method	-
Packing Group	III
EPG Number	-
IERG Number	47
IMO Marine Pollutant	Yes. Environmentally Hazardous Substance mark required.
IMDG EMS	F-A, S-F
Other Information	Do not carry more than 3kg of CUPROFIX DISPERS on a passenger service vehicle. Segregation: Check the latest Land Transport Rule Dangerous Goods Rule 45001 for additional information. Sea transport may require additional segregation. Refer NZS5433 sea segregation for details.

15. REGULATORY INFORMATION

National and or International Regulatory Information	Registered pursuant to the ACVM Act 1997, No. P5672 See www.nzfsa.govt.nz/acvm/ for registration conditions Approved pursuant to the HSNO Act 1996, Approval Code HSR000605 See www.ermanz.govt.nz for approval controls
Packaging & Labelling	HARMFUL * ECOTOXIC - keep out of reach of children



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Infosafe No™ 3NUN1 Issue Date : June 2011 ISSUED by NUFARMNZ

Product Name CUPROFIX® DISPERS®

Hazard Rating NFPA/HMIS: 2-0-0
Systems

16. OTHER INFORMATION

Contact Person/Point IN AN EMERGENCY, DIAL 111 - FIRE OR POLICE
24Hr Tollfree Emergency No: 0800 651 911
24Hr Emergency No: National Poisons Centre Phone: 0800 764 766

Revisions The SDS was reviewed. Various changes were made to the information.

Highlighted Section 2 - correction to historical data
Section 4, 8, 10, 12 - additional information,
Plus other minor updates

Other Information Supersedes SDS issued November 2006
® Registered trademark of Cerexagri s.a.
...End Of MSDS...

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Safety Data Sheet

United Phosphorus, Inc.

Preparation Date 10-May-2015

Revision date 10-May-2015

Revision Number: 2

1. Identification of the Substance/Preparation and of the Company/Undertaking

Product identifier

Product Description: Cuprofix® Ultra 40 Disperss®

Other means of identification

Item#: 12-413
UN-No UN3077
Synonyms Not Available
Registration number(s) 70506-201

Recommended use of the chemical and restrictions on use

Recommended use Fungicide. Bactericide.
Uses advised against Activities contrary to label recommendation

Details of the Supplier of the Safety Data Sheet

Supplier Address

United Phosphorus Inc.
630 Freedom Business Center
Suite 402
King of Prussia, PA 19406

Emergency telephone number

Company Phone Number 1-800-438-6071
Emergency telephone number Chemtrec: (800) 424-9300 (24hrs) or (703) 527-3887
Medical: Rocky Mountain Poison Control Center
(866) 673-6671 (24hrs)

2. Hazards Identification

Classification

OSHA Regulatory Status

This chemical is not considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.122)

Label elements

EMERGENCY OVERVIEW

hazard statements
Very toxic to aquatic life



appearance Green powder

Physical state solid Dry Flowable

Odor odorless

Hazards Not Otherwise Classified (HNOC)

OTHER INFORMATION

- Toxic to aquatic life

3. Composition/information on Ingredients

Chemical name	CAS-No	Weight %	Trade secret
Copper sulfate, basic	1344-73-6	20-90	
Calcium sulfate dihydrate	13397-24-5	<10	
Sodium xylene sulfonate	1300-72-7	<20	

If CAS number is "proprietary", the specific chemical identity and percentage of composition has been withheld as a trade secret.

4. First aid measures**FIRST AID MEASURES**

Eye contact	Immediately flush with plenty of water. After initial flushing, remove any contact lenses and continue flushing for at least 15 minutes. Keep eye wide open while rinsing. If symptoms persist, call a physician.
Skin contact	Wash off immediately with soap and plenty of water removing all contaminated clothes and shoes. Immediate medical attention is not required. If skin irritation persists, call a physician.
Inhalation	Immediate medical attention is not required. Move to fresh air in case of accidental inhalation of vapors or decomposition products. If symptoms persist, call a physician.
Ingestion	Never give anything by mouth to an unconscious person. Do not induce vomiting without medical advice. Call a physician. Clean mouth with water and drink afterwards plenty of water afterwards.
Protection of First-aiders	Use personal protective equipment.

Most Important Symptoms and Effects, Both Acute and Delayed

Most Important Symptoms and Effects No information available.

Indication of Any Immediate Medical Attention and Special Treatment Needed

Notes to physician Treat symptomatically.

5. Fire-fighting measures**Suitable extinguishing media**

Use: Dry chemical. Carbon dioxide (CO₂). Water spray. alcohol-resistant foam.

Unsuitable extinguishing media Decomposition by contact with water may generate vapours which can be ignited by heat or open flame.

Specific hazards arising from the chemical

No information available.

Hazardous combustion products No information available.

Explosion data**Protective equipment and precautions for firefighters**

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

Personal Precautions Use personal protective equipment. Avoid contact with the skin and the eyes. Wear protective gloves/clothing and eye/face protection. Wash thoroughly after handling.

Environmental Precautions

Environmental precautions Consult a regulatory specialist to determine appropriate state or local reporting requirements, for assistance in waste characterization and/or hazardous waste disposal and other requirements listed in pertinent environmental permits.

Methods and material for containment and cleaning up

Methods for Clean-Up Sweep up and shovel into suitable containers for disposal.

7. Handling and Storage

Precautions for safe handling

Handling Avoid contact with skin and eyes. Do not eat, drink or smoke when using this product. Keep out of reach of children. Wash thoroughly after handling.

Conditions for safe storage, including any incompatibilities

Storage Keep in a dry, cool and well-ventilated place. Keep out of the reach of children. Store in cool, dry, well-ventilated area of non-combustible construction away from heavily trafficked areas and emergency exits.

incompatible materials Strong acids.

8. Exposure Controls/Personal Protection

Exposure guidelines

Chemical name	ACGIH TLV	OSHA PEL
Calcium sulfate dihydrate	TWA: 10 mg/m ³ inhalable fraction	TWA: 15 mg/m ³ total dust TWA: 5 mg/m ³ respirable fraction (vacated) TWA: 15 mg/m ³ total dust (vacated) TWA: 5 mg/m ³ respirable fraction

Engineering controls Investigate engineering techniques to reduce exposures. Local mechanical exhaust ventilation is preferred. Consult ACGIH ventilation manual or NFPA Standard 91 for design of exhaust systems.

Personal protective equipment

Eye/Face Protection

Use eye protection to avoid eye contact. Where there is potential for eye contact have eye flushing equipment available. Safety glasses with side-shields.

Skin protection

Wear protective gloves/clothing. Socks and footwear.

Respiratory protection

Where airborne exposure is likely, use NIOSH approved respiratory protection equipment appropriate to the material and/or its components. Full facepiece equipment is recommended and, if used, replaces need for face shield and/or chemical goggles. If exposures cannot be kept at a minimum with engineering controls, consult respirator manufacturer to determine appropriate type equipment for given application. Observe respirator use limitations specified by NIOSH or the manufacturer. For emergency and other conditions where there may be a potential for significant exposure, use an approved full face positive-pressure, self-contained breathing apparatus. Respiratory protection programs must comply with 29 CFR 1910.134.

General hygiene considerations

Do not eat, drink or smoke when using this product. Remove and wash contaminated clothing before re-use. Wear suitable gloves and eye/face protection. Wash hands and face before breaks and immediately after handling the product.

9. Physical and Chemical Properties

Information on basic physical and chemical properties

Physical state	solid Dry Flowable		
appearance	Green powder	Odor	odorless
color	No information available		

<u>Property</u>	<u>VALUES</u>	<u>Remarks/ • Method</u>
pH	7	
Melting point/freezing point	8 °C / 46 °F	
Boiling Point/Range	No information available	
Flash Point	No information available	
Evaporation Rate	No information available	
flammability (solid, gas)	No information available	
Flammability limit in air		
Upper Flammability Limit	No information available	
Lower Flammability Limit	No information available	
vapor pressure	No information available	
Vapor Density	No information available	
Specific gravity	No information available	
Water solubility	No information available	
Solubility in Other Solvents	No information available	
Partition coefficient: n-octanol/water	No information available	
Autoignition temperature	No information available	
decomposition temperature	No information available	
Viscosity, kinematic	No information available	
Dynamic viscosity	No information available	
Explosive properties	No information available	
Oxidizing properties	No information available	

OTHER INFORMATION

Softening point	No information available
molecular weight	No information available
VOC Content	No information available
density	No information available
Bulk density	700-100 kg/m ³

10. Stability and Reactivity

Reactivity

no data available

Chemical stability

Stable under normal conditions. Hazardous polymerisation does not occur.

Possibility of hazardous reactions

None under normal processing.

Conditions to avoid

Extremes of temperature and direct sunlight.

incompatible materials

Strong acids.

Hazardous decomposition products

Oxides of copper.

11. Toxicological Information

Information on Likely Routes of Exposure

Inhalation	Harmful by inhalation.
------------	------------------------

Eye contact May cause irritation.
Skin contact May cause irritation.
Ingestion HARMFUL IF SWALLOWED.

Component Information

Copper sulfate
 Workers exposed by inhalation have reported irritation of the nose and throat, occasional ulceration of nasal septum, and inflammation and diffuse fibrosis of the lungs. Humans exposed to high levels in drinking water have experienced abdominal pain, vomiting, diarrhoea, nausea, and a metallic taste in the mouth. Accidental human poisonings have caused similar gastrointestinal symptoms and, in severe cases, fatalities due to vascular injury and hemolytic anemia which caused severe kidney and liver damage. Individuals with Wilson's Disease, a genetic defect in copper transport, may be particularly susceptible to copper exposure. Liver damage and anemia have been observed in these individuals. Greenish skin discoloration may occur from dermal contact. Although there have been some reports of contact dermatitis in human studies with copper metals, industrial exposure has rarely resulted in allergic reactions or dermatitis.

Acute inhalation exposure to guinea pigs showed evidence of reduced lung function. In studies conducted by the NTP, repeated administration in the feed of rats produced inflammation of the liver and forestomach lining, kidney damage, and slight anemia. Mice showed only inflammatory changes of the forestomach. Dietary administration prior to and during pregnancy in mice resulted in increased litter size, fetal weight, fetal mortality and the number of birth defects. No genetic changes were observed in tests using bacteria; however, changes were observed in animal cells.

Single exposure studies indicate that this material is slightly to moderately toxic if swallowed (rat LD50 300-960 mg/kg) Napthalene sulfonic acid polymer with formaldehyde, sodium salt
 Single exposure studies indicate that this material is practically non-toxic if swallowed (rat LD50 4,300 mg/kg) no more than slightly toxic if absorbed through skin (rat LD50 >2,000 mg/kg) and slightly toxic to rabbit eyes and skin.

Chemical name	LD50 Oral	LD50 Dermal	LC50 Inhalation
Sodium xylene sulfonate 1300-72-7	= 7200 mg/kg (Rat)	-	-

Information on Toxicological Effects

Symptoms No information available.

Delayed and immediate effects as well as chronic effects from short and long-term exposure

sensitization No information available.
Mutagenic effects No information available.
Carcinogenicity There are no known carcinogenic chemicals in this product.
Reproductive effects Not Available.
STOT - Single Exposure No information available.
STOT - repeated exposure No information available.
Chronic toxicity Avoid repeated exposure.
Target organ effects Respiratory System, EYES, skin.
Aspiration hazard No information available.

Numerical Measures of Toxicity - No information available

12. Ecological Information

Marine Pollutant.

ecotoxicity

Copper sulfate: This material is highly toxic to worms, snails, and clams (EC50 35.8 -900 ug/L) Daphnia magna, Daphnia pulex,

crayfish and midges (EC50 6.5 - 25.42 ug/L) Salmon (LC50 17-890 ug/L) polycrate worm, alabone, mussel, and oyster (LC50 5.3 - 480 ug/L) and Florida pompano (LC50 360 -510 ug/L). It is moderately to highly toxic to carp, minnows, guppies, pumpkinskin, perch, and bass (LC50 22-1760 ug/L) and bluegill sinfish (LC50 200 - 10,200 ug/L)

Copper Sulfate Chem Fate : The bioconcentration factor (BCF) in fish is 10-100 indicating a low potential for bioconcentration. The BCF is higher in mollusks, especially oysters, where it may reach 30,000. The bioaccumulation ration in fish is less than 1 indicating no biomagnification in the food chain. No bioaccumulation was obtained from a study of pollutant concentration in the muscles and livers of 10 mammal species and no evidence of biomagnification in the food chain was observed.

Persistence/Degradability

No information available.

Bioaccumulation/ Accumulation

No information available.

Other Adverse Effects

No information available

13. Disposal Considerations

Waste Treatment Methods

Waste Disposal Method Pesticide wastes are acutely hazardous. Improper disposal of excess pesticide or rinsate is a violation of Federal law. If the wastes cannot be disposed of by use or according to label instructions, contact your State Pesticide or Environmental Control Agency, or the Hazardous Waste representative at the nearest EPA Regional Office for guidance.

Contaminated packaging Refer to product label.

14. Transport Information

DOT

UN-No	UN3077
Proper shipping name	Environmentally hazardous substances, solid, n.o.s (Basic Copper sulfate)
Hazard class	9
Packing group	PG III
Marine Pollutant	Marine Pollutant.

ICAO

UN-No	UN3077
Proper shipping name	Environmentally hazardous substance, solid, n.o.s (Basic Copper Sulfate)
Hazard class	9
Packing group	PG III
Description	Marine Pollutant

IATA

UN-No	UN3077
Proper shipping name	Environmentally hazardous substances, solid, n.o.s (Basic copper sulfate)
Hazard class	9
Packing group	PG III
Description	Marine Pollutant

IMDG/IMO

UN-No	UN3077
Proper shipping name	Environmentally hazardous substances, solid n.o.s. (Basic Copper sulfate)
Hazard class	9

Packing group	PG III
Marine Pollutant	This product contains a chemical which is listed as a marine pollutant according to IMDG/IMO

15. Regulatory Information

This chemical is a pesticide product registered by the Environmental Protection Agency and is subject to certain labeling requirements under federal pesticide law. These requirements differ from the classification criteria and hazard information required for safety data sheets, and for workplace labels of non-pesticide chemicals. Following is the hazard information as required on the pesticide label:

signal word CAUTION

Ventilation Control PESTICIDE APPLICATORS & WORKERS THESE WORKERS MUST REFER TO PRODUCT LABELING AND DIRECTIONS FOR USE IN ACCORDANCE WITH EPA WORKER PROTECTION STANDARD 40 CFR PART 170.

Keep out of Reach of Children. Harmful if swallowed. Harmful if inhaled. Prolonged or frequent repeated skin contact may cause allergic reaction in some individuals. Toxic to fish and aquatic invertebrates.

International Inventories

USINV	Not determined
DSL/NDSL	Not determined
EINECS/ ELINCS	Does not comply
ENCS	Does not comply
China	Complies
KECL	Does not comply
PICCS	Does not comply
AICS	Does not comply
TSCA	Does not comply

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory

DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List

EINECS/ELINCS - European Inventory of Existing Commercial Chemical Substances/EU List of Notified Chemical Substances

ENCS - Japan Existing and New Chemical Substances

IECSC - China Inventory of Existing Chemical Substances

KECL - Korean Existing and Evaluated Chemical Substances

PICCS - Philippines Inventory of Chemicals and Chemical Substances

AICS - Australian Inventory of Chemical Substances

Federal Regulations

SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product contains a chemical or chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372:

SARA 311/312 Hazardous

Categorization

Acute health hazard	yes
Chronic health hazard	yes
Fire hazard	No
Sudden release of pressure hazard	No
Reactive Hazard	No

CERCLA

SARA Product RQ 0

RCRA
Pesticide Information

State Regulations

State Right-to-Know

Chemical name	Massachusetts	New Jersey	Pennsylvania	Illinois	Rhode Island
Calcium sulfate dihydrate		X	X		

International regulations

U.S. EPA Label information

EPA Pesticide registration number 70506-201

16. Other Information

NFPA HEALTH 2 flammability 0 Instability 0 Physical hazard -

Preparation Date 10-May-2015

Revision date 10-May-2015

Revision Summary
Update to GHS format

Disclaimer

United Phosphorus, Inc. believes that the information and recommendations contained herein (including data and statements) are accurate as of the date hereof. NO WARRANTY OF FITNESS FOR ANY PARTICULAR PURPOSE, WARRANTY OF MERCHANTABILITY, OR ANY OTHER WARRANTY, EXPRESSED OR IMPLIED, IS MADE CONCERNING THE INFORMATION PROVIDED HEREIN. The information provided herein relates only to the specific product designated and may not be valid where such product is used in combination with other materials or in any process. Further, since the conditions and methods of use are beyond the control of United Phosphorus, Inc. and United Phosphorus Inc. expressly disclaims any and all liability as to any results obtained or arising from any use of the product or reliance on such information.

End of MSDS



Safety Data Sheet

CHIPCO ALIETTE® SIGNATURE FUNGICIDE

SDS Number: 102000020218
 SDS Version 2.1
 Revision Date: 06/19/2012
 Print Date: 06/19/2012

SECTION 1. CHEMICAL PRODUCT AND COMPANY INFORMATION

Product name CHIPCO ALIETTE® SIGNATURE FUNGICIDE
SDS Number 102000020218
Product code (UVP) 79375409
PCP Registration No. 28299
Product Use Fungicide

Bayer CropScience Inc
 #200, 160 Quarry Park Blvd, SE
 Calgary, Alberta T2C 3G3
 Canada

For MEDICAL, TRANSPORTATION or other EMERGENCY call: 1-800-334-7577 (24 hours/day)
 For Product Information call: 1-888-283-6847

SECTION 2. HAZARDS IDENTIFICATION

NOTE: Please refer to Section 11 for detailed toxicological information.

Emergency Overview Warning! Causes eye irritation. Harmful if swallowed, inhaled or absorbed through the skin. Avoid contact with skin, eyes and clothing.

Physical State water-dispersible granules

Odor slightly acidic

Appearance green

Exposure routes Eye contact, Skin Absorption, Ingestion, Inhalation

Immediate Effects

Eye Causes redness, irritation, tearing. Avoid contact with eyes.

Skin Slight irritation Causes redness, swelling. Harmful if absorbed through skin. Avoid contact with skin and clothing.

Ingestion Harmful if swallowed. Do not take internally.

Inhalation May cause upper respiratory tract irritation. Harmful if inhaled. Avoid breathing dust.

Chronic or Delayed Long-Term This product or its components may have target organ effects.



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SDS Version 2.1

CHIPCO ALIETTE® SIGNATURE FUNGICIDE

Medical Conditions Aggravated by Exposure Inhalation of product may aggravate existing chronic respiratory problems such as asthma, emphysema or bronchitis. Skin contact may aggravate existing skin disease.

Potential Environmental Effect Toxic to aquatic and estuarine invertebrates.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

<u>Hazardous Component Name</u>	<u>CAS-No.</u>	<u>Average % by Weight</u>
Fosetyl Aluminium	39148-24-8	80.00
Nonylphenol ethoxylate, branched	68412-54-4	7.00
Lignosulfonic acid, sodium salt, sulfomethylated	68512-34-5	2.80

SECTION 4. FIRST AID MEASURES

General When possible, have the product container or label with you when calling a poison control center or doctor or going for treatment.

Eye Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Call a physician or poison control center immediately.

Skin Take off contaminated clothing and shoes immediately. Wash off immediately with plenty of water for at least 15 minutes. Call a physician or poison control center immediately.

Ingestion Call a physician or poison control center immediately. Rinse out mouth and give water in small sips to drink. DO NOT induce vomiting unless directed to do so by a physician or poison control center. Never give anything by mouth to an unconscious person. Do not leave victim unattended.

Inhalation Move to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth if possible. Call a physician or poison control center immediately.

Notes to physician

Hazards Consideration should be given to the possibility that overexposure to materials other than this product may have occurred.

Treatment Appropriate supportive and symptomatic treatment as indicated by the patient's condition is recommended. There is no specific antidote.



Safety Data Sheet

CHIPCO ALIETTE® SIGNATURE FUNGICIDE

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SDS Version 2.1

SECTION 5. FIRE FIGHTING MEASURES

Flash point	not applicable
Autoignition temperature	no data available
Lower Flammability Limit	not applicable
Upper Flammability Limit	not applicable
Explosiveness	no data available
Fire and Explosion Hazards	Dangerous gases are evolved in the event of a fire.
Suitable extinguishing media	Foam, Dry powder, Carbon dioxide (CO ₂), Water spray
Fire Fighting Instructions	<p>Keep out of smoke. Fight fire from upwind position. Cool closed containers exposed to fire with water spray. Do not allow run-off from fire fighting to enter drains or water courses.</p> <p>Firefighters should wear NIOSH approved self-contained breathing apparatus and full protective clothing.</p>

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions	Keep unauthorized people away. Isolate hazard area. Avoid contact with spilled product or contaminated surfaces.
Methods for cleaning up	Avoid dust formation. Sweep up or vacuum up spillage and collect in suitable container for disposal. Clean contaminated floors and objects thoroughly, observing environmental regulations.
Additional advice	Use personal protective equipment. Do not allow to enter soil, waterways or waste water canal.

SECTION 7. HANDLING AND STORAGE

Handling procedures	Handle and open container in a manner as to prevent spillage. Use only in area provided with appropriate exhaust ventilation.
Storing Procedures	Store in a cool, dry place and in such a manner as to prevent cross contamination with other crop protection products, fertilizers, food, and feed. Store in original container and out of the reach of children, preferably in a locked



Safety Data Sheet

CHIPCO ALIETTE® SIGNATURE FUNGICIDE

SDS Number: 102000020218
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storage area.

Work/Hygienic Procedures

Wash hands thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco, using the toilet or applying cosmetics. Smoking, eating and drinking should be prohibited in the application area.

Remove Personal Protective Equipment (PPE) immediately after handling this product. Before removing gloves clean them with soap and water. Remove soiled clothing immediately and clean thoroughly before using again. Wash thoroughly and put on clean clothing.

SECTION 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

General Protection	Follow all label instructions. Train employees in safe use of the product. Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables, use detergent and warm/tepid water. Keep and wash PPE separately from other laundry.
Eye/Face Protection	Tightly fitting safety goggles
Hand protection	Chemical resistant nitrile rubber gloves
Body Protection	Wear long-sleeved shirt and long pants and shoes plus socks.
Respiratory protection	When respirators are required, select NIOSH approved equipment based on actual or potential airborne concentrations and in accordance with the appropriate regulatory standards and/or industry recommendations.
Exposure Limits	
Fosetyl Aluminium	39148-24-8 OES BCS* TWA 10 mg/m3

*OES BCS: Internal Bayer CropScience "Occupational Exposure Standard"

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	green
Physical State	water-dispersible granules
Odor	slightly acidic
pH	3.9
Vapor Pressure	no data available



Safety Data Sheet

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SDS Number: 102000020218
SDS Version 2.1

Vapor Density (Air = 1)	no data available
Bulk density	32 - 38 lb/ft ³
Evaporation rate	no data available
Boiling Point	no data available
Melting / Freezing Point	no data available
Minimum Ignition Energy	no data available
Partition coefficient: n-octanol/water	no data available
Viscosity	not applicable

SECTION 10. STABILITY AND REACTIVITY

Conditions to avoid	Exposure to moisture.
Incompatibility	Strong oxidizing agents Strong acids Strong bases
Hazardous Decomposition Products	Thermal decomposition Carbon monoxide Nitrogen oxides (NO _x) Oxides of phosphorus
Chemical Stability	Stable under normal conditions.

SECTION 11. TOXICOLOGICAL INFORMATION

Only acute toxicity studies have been performed on the formulated product. The non-acute information pertains to the technical-grade active ingredient, fosetyl aluminum.

Acute oral toxicity	male/female combined rat: LD50: 2,860 mg/kg
Acute dermal toxicity	rabbit: LD50: > 2,020 mg/kg



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- Acute inhalation toxicity** male/female combined rat: LC50: > 5.0 mg/l
Exposure time: 4 h
Determined in the form of dust.
- male/female combined rat: LC50: > 20.0 mg/l
Exposure time: 1 h
Determined in the form of dust.
Extrapolated from the 4 hr LC50.
- Skin irritation** rabbit: Slight irritation
- Eye irritation** rabbit: Mild eye irritation.
- Sensitisation** guinea pig: Non-sensitizing.
- Chronic toxicity** Fosetyl-al caused adrenal, urinary bladder and/or testicular effects in chronic studies in rats and dogs.

Assessment Carcinogenicity

Fosetyl-al was not carcinogenic in an oncogenicity study in mice. In a carcinogenicity study in rats, an increased incidence of urinary bladder tumors were seen at extremely high doses not likely to occur outside the experimental laboratory. Therefore, EPA concluded that fosetyl-al is not likely to pose a carcinogenic hazard to humans.

- ACGIH**
None.
- NTP**
None.
- IARC**
None.
- OSHA**
None.

- Reproductive toxicity** REPRODUCTION: Fosetyl-al was not a reproductive toxicant in a multi-generation reproduction study in rats.
- DEVELOPMENTAL TOXICITY: Fosetyl-al was not a primary developmental toxicant in rats and rabbits. Developmental effects were observed in rats but were considered secondary to maternal toxicity.
- Mutagenicity** Fosetyl-al was not mutagenic or genotoxic in a battery of in vitro and in vivo tests.

SECTION 12. ECOLOGICAL INFORMATION



Safety Data Sheet

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SDS Number: 102000020218
SDS Version 2.1

Environmental precautions Do not apply directly to water, to areas where surface water is present or to intertidal areas below the mean high water mark. Do not contaminate surface or ground water by cleaning equipment or disposal of wastes, including equipment wash water. Drift and runoff from treated areas may be hazardous to aquatic organisms in adjacent sites. Apply this product as specified on the label.

SECTION 13. DISPOSAL CONSIDERATIONS

General Disposal Guidance Pesticide wastes are acutely hazardous. Improper disposal of excess pesticide, spray mixture, or rinsate is a violation of Federal Law. If these wastes cannot be disposed of by use according to label instructions, contact your State Pesticide or Environmental Control Agency, or the Hazardous Waste representative at the nearest EPA Regional Office for guidance.

Container Disposal Dispose of empty container in a sanitary landfill or by incineration, or, if allowed by State/Provincial and local authorities, by burning. If burned, stay out of smoke. Follow advice on product label and/or leaflet.

SECTION 14. TRANSPORT INFORMATION

According to national and international transport regulations this material is not classified as dangerous goods / hazardous material.

Freight Classification: INSECTICIDES OR FUNGICIDES, N.O.I., OTHER THAN POISON

SECTION 15. REGULATORY INFORMATION

PCP Registration No. 28299

US Federal Regulations

TSCA list

Nonylphenol ethoxylate, branched 68412-54-4
Lignosulfonic acid, sodium salt, sulfomethylated 68512-34-5

US. Toxic Substances Control Act (TSCA) Section 12(b) Export Notification (40 CFR 707, Subpt D)

None.

SARA Title III - Section 302 - Notification and Information

None.

SARA Title III - Section 313 - Toxic Chemical Release Reporting

None.

US States Regulatory Reporting

CA Prop65

This product does not contain any substances known to the State of California to cause cancer.

This product does not contain any substances known to the State of California to cause reproductive harm.

US State Right-To-Know Ingredients



Safety Data Sheet

CHIPCO ALIETTE® SIGNATURE FUNGICIDE

SDS Number: 102000020218
SDS Version 2.1

None.

Canadian Regulations

Canadian Domestic Substance List

Nonylphenol ethoxylate, branched	68412-54-4
Lignosulfonic acid, sodium salt, sulfomethylated	68512-34-5

Environmental

CERCLA

None.

Clean Water Section 307 Priority Pollutants

None.

Safe Drinking Water Act Maximum Contaminant Levels

None.

International Regulations

European Inventory of Existing Commercial Substances (EINECS)

Fosetyl Aluminium	39148-24-8
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SECTION 16. OTHER INFORMATION

NFPA 704 (National Fire Protection Association):

Health - 1 Flammability - 0 Instability - 1 Others - none

HMIS (Hazardous Materials Identification System, based on the Third Edition Ratings Guide)

Health - 1 Flammability - 0 Physical Hazard - 0 PPE -

0 = minimal hazard, 1 = slight hazard, 2 = moderate hazard, 3 = severe hazard, 4 = extreme hazard

Reason for Revision: Reviewed and updated for general editorial purposes. The following sections have been revised: Section 16: Other Information.

Prepared by the HSE Department of Bayer CropScience Inc. (306)-721-0310.

Revision Date: 06/19/2012

This information is provided in good faith but without express or implied warranty. The customer assumes all responsibility for safety and use not in accordance with label instructions. The product names are registered trademarks of Bayer.

DACONIL ACTION

Date: 2/5/2014

Replaces: 1/16/2014

1. PRODUCT IDENTIFICATION

Product identifier on label: **DACONIL ACTION**

Product No.: A16422A

Use: Fungicide/Plant Activator

Manufacturer: Syngenta Crop Protection, LLC
Post Office Box 18300
Greensboro NC 27419

Manufacturer Phone: 1-800-334-9481

Emergency Phone: 1-800-888-8372

2. HAZARDS IDENTIFICATION

Classifications: Skin Corrosion/Irritation: Category 2
Oral: Category 4
Dermal: Category 4
Inhalation: Category 3
Skin Sensitizer: Category 1B
Carcinogenicity: Category 2
Specific Target Organ Toxicity: Repeated Category 2
Specific Target Organ Toxicity: Drowsiness Category 3
Eye Damage/Irritation: Category 2A

Signal Word (OSHA): Danger

Hazard Statements: Harmful if swallowed
Harmful in contact with skin
Causes skin irritation
May cause an allergic skin reaction
Causes serious eye irritation
Toxic if inhaled
May cause respiratory irritation
May cause drowsiness or dizziness
Suspected of causing cancer
May cause damage to blood, liver, lung, kidney, spleen through prolonged or repeated exposure.

Hazard Symbols:



DACONIL ACTION

Date: 2/5/2014

Replaces: 1/16/2014

Precautionary Statements:

- Obtain special instructions before use.
- Do not handle until all safety precautions have been read and understood.
- Do not breathe mist, vapors, spray.
- Wash hands and face thoroughly after handling.
- Do not eat, drink or smoke when using this product.
- Use only outdoors or in a well-ventilated area.
- Contaminated work clothing must not be allowed out of the workplace.
- Wear protective gloves, protective clothing, eye protection.
- If swallowed: Immediately call a poison center, doctor or Syngenta. Rinse mouth.
- If on skin: Wash with plenty of soap and water.
- If inhaled: Remove person to fresh air and keep comfortable for breathing.
- If exposed or concerned: Call a poison center, doctor or Syngenta.
- Call a poison center, doctor or Syngenta if you feel unwell.
- See Section 4 First Aid Measures.
- If skin irritation or rash occurs: Get medical advice.
- If eye irritation persists: Get medical advice.
- Take off immediately all contaminated clothing and wash it before reuse.
- Wash contaminated clothing before reuse.
- Store locked up.
- Dispose of contents and container in accordance with local regulations.

Other Hazard Statements: None

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	Common Name	CAS Number	Concentration
1,2-Propanediol	Propylene Glycol	57-55-6	Trade Secret
Tetrachloroisophthalonitrile	Chlorothalonil	1897-45-6	(53.94%)
1,2,3-Benzothiadiazole-7-carbothioic acid S-methyl ester	Acibenzolar-S-Methyl	135158-54-2	(0.11%)

Ingredients not precisely identified are proprietary or non-hazardous. Values are not product specifications.

4. FIRST AID MEASURES

Have the product container, label or Safety Data Sheet with you when calling Syngenta (800-888-8372), a poison control center or doctor, or going for treatment.

Ingestion: If swallowed: Call Syngenta (800-888-8372), a poison control center or doctor immediately for treatment advice. Have the person sip a glass of water if able to swallow. Do not induce vomiting unless told to do so after calling 800-888-8372 or by a poison control center or doctor. Do not give anything by mouth to an unconscious person.

Eye Contact: If in eyes: Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after 5 minutes, then continue rinsing eye. Call Syngenta (800-888-8372), a poison control center or doctor for treatment advice.

Skin Contact: If on skin or clothing: Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20

DACONIL ACTION

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Replaces: 1/16/2014

minutes. Call Syngenta (800-888-8372), a poison control center or doctor for treatment advice.

Inhalation: If inhaled: Move person to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth if possible. Call Syngenta (800-888-8372), a poison control center or doctor for further treatment advice.

Most important symptoms/effects:

Eye irritation

Skin irritation

Allergic skin reaction

Indication of immediate medical attention and special treatment needed:

There is no specific antidote if this product is ingested.

Treat symptomatically.

Persons suffering a temporary allergic reaction may respond to treatment with antihistamines or steroid creams and/or systemic steroids.

5. FIRE FIGHTING MEASURES

Suitable (and unsuitable) extinguishing media:

Use dry chemical, foam or CO2 extinguishing media. If water is used to fight fire, dike and collect runoff.

Specific Hazards:

During a fire, irritating and possibly toxic gases may be generated by thermal decomposition or combustion.

Prevent use of contaminated buildings, area, and equipment until decontaminated. Water runoff can cause environmental damage.

Special protective equipment and precautions for firefighters:

Wear full protective clothing and self-contained breathing apparatus. Evacuate nonessential personnel from the area to prevent human exposure to fire, smoke, fumes or products of combustion.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment, and emergency procedures:

Follow exposure controls/personal protection outlined in Section 8.

Methods and materials for containment and cleaning up:

Control the spill at its source. Contain the spill to prevent from spreading or contaminating soil or from entering sewage and drainage systems or any body of water. Clean up spills immediately, observing precautions outlined in Section 8. Cover entire spill with absorbing material and place into compatible disposal container. Scrub area with hard water detergent (e.g. commercial products such as Tide, Joy, Spic and Span). Pick up wash liquid with additional absorbent and place into compatible disposal container. Once all material is cleaned up and placed in a disposal container, seal container and arrange for disposition.

7. HANDLING AND STORAGE

Precautions for safe handling:

Store the material in a well-ventilated, secure area out of reach of children and domestic animals. Do not store food, beverages or tobacco products in the storage area. Prevent eating, drinking, tobacco use, and cosmetic application in areas where there is a potential for exposure to the material. Wash thoroughly with soap and water after handling.

Conditions for safe storage, including any incompatibilities:

Store locked up.

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Date: 2/5/2014

Replaces: 1/16/2014

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

THE FOLLOWING RECOMMENDATIONS FOR EXPOSURE CONTROLS/PERSONAL PROTECTION ARE INTENDED FOR THE MANUFACTURE, FORMULATION AND PACKAGING OF THIS PRODUCT.

FOR COMMERCIAL APPLICATIONS AND/OR ON-FARM APPLICATIONS CONSULT THE PRODUCT LABEL.

Occupational Exposure Limits:

Chemical Name	OSHA PEL	ACGIH TLV	Other	Source
Propylene Glycol	Not Established	Not Established	10 mg/m ³ TWA	AIHA
Chlorothalonil	Not Established	Not Established	0.1 mg/m ³ TWA	Syngenta
Acibenzolar-S-Methyl	Not Established	Not Established	10 mg/m ³ TWA	Syngenta

Appropriate engineering controls:

Use effective engineering controls to comply with occupational exposure limits (if applicable).

Individual protection measures:

Ingestion:

Prevent eating, drinking, tobacco usage and cosmetic application in areas where there is a potential for exposure to the material. Wash thoroughly with soap and water after handling.

Eye Contact:

Where eye contact is likely, use chemical splash goggles. Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower.

Skin Contact:

Where contact is likely, wear chemical-resistant gloves (such as barrier laminate, butyl rubber, nitrile rubber, neoprene rubber, polyvinyl chloride [PVC] or Viton), coveralls, socks and chemical-resistant footwear.

Inhalation:

A respirator is not normally required when handling this substance. Use effective engineering controls to comply with occupational exposure limits.

In case of emergency spills, use a NIOSH approved respirator with any N, R, P or HE filter.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance: Grey liquid

Odor: Weak paint

Odor Threshold: Not Available

pH: 7.4 (1% solution in deionized H₂O @ 77°F [25°C])

Melting point/freezing point: Not Available

Initial boiling point and boiling range: Not Available

Flash Point (Test Method): > 212°F (Pensky-Martens CC)

Flammable Limits (% in Air): Not Available

Flammability: Not Applicable

Vapor Pressure: Acibenzolar-S-Methyl 0.00000165mmHg @ 68°F (20°C)

Chlorothalonil 0.00000057mmHg @ 77°F (25°C)

Vapor Density: Not Applicable

DACONIL ACTION

Date: 2/5/2014

Replaces: 1/16/2014

Relative Density: 1.350 g/cm³ @ 68°F (20°C)Solubility (ies): Acibenzolar-S-Methyl 7.7 mg/l @ 68°F (20°C)
Chlorothalonil 0.81 mg/l @ 77°F (25°C)

Partition coefficient: n-octanol/water: Not Available

Autoignition Temperature: > 1202°F

Decomposition Temperature: Not Available

Viscosity: Not Available

Other: None

10. STABILITY AND REACTIVITY

Reactivity: Not reactive.

Chemical stability: Stable under normal use and storage conditions.

Possibility of hazardous reactions: Will not occur.

Conditions to Avoid: Not Available

Incompatible materials: Not Available

Hazardous Decomposition Products: Not Available

11. TOXICOLOGICAL INFORMATION

Health effects information

Likely routes of exposure: Dermal, Inhalation

Symptoms of exposure: Eye irritation, Skin irritation, Drowsiness or dizziness

Delayed, immediate and chronic effects of exposure: Developmental toxicity, Possible carcinogenicity

Numerical measures of toxicity (acute toxicity/irritation studies (finished product))

Ingestion:	Oral (LD50 Female Rat) :	3045 mg/kg body weight
Dermal:	Dermal (LD50 Rat) :	> 5000 mg/kg body weight
Inhalation:	Inhalation (LC50 Rat) :	> 0.51 mg/l air - 4 hours
Eye Contact:	Severely Irritating (Rabbit)	
Skin Contact:	Slightly Irritating (Rabbit)	
Skin Sensitization:	A weak skin sensitizer (based on the technical material)	

Reproductive/Developmental Effects

Acibenzolar-S-Methyl: Developmental toxicity and fetal malformations observed at high maternal doses (rats). Additional testing showed that these effects are not relevant to humans.

Chlorothalonil: Did not show reproductive toxicity effects in animal experiments. Did not show teratogenic effects in animal experiments.

DACONIL ACTION

Date: 2/5/2014

Replaces: 1/16/2014

Chronic/Subchronic Toxicity Studies

Acibenzolar-S-Methyl: Slight hemolytic anemia at highest dose level (rats, mice and dogs). Liver and spleen effects observed in highest dose level (rats and dogs).

Chlorothalonil: In dogs, 1 year administration caused a significant decrease in body weight gain and increases in absolute liver and kidney weights.

Neurotoxicity: No evidence in regulatory studies.

Carcinogenicity

Acibenzolar-S-Methyl: Not carcinogenic at dietary levels up to 7500 ppm (rat) and 6000 ppm (mouse).

Chlorothalonil: Chlorothalonil causes kidney tumors in rats and mice via a nongentoxic mode of action secondary to target organ toxicity.

Did not show mutagenic effects in animal experiments.

IARC identifies chlorothalonil as a 2B carcinogen (possibly carcinogenic to humans).

Chemical Name	NTP/IARC/OSHA Carcinogen
1,2-Propanediol	No
Tetrachloroisophthalonitrile	IARC Group 2B
1,2,3-Benzothiadiazole-7-carbothioic acid S-methyl ester	No

Other Toxicity Information

None

Toxicity of Other Components

Propylene Glycol

Test results reported in Section 11 for the final product take into account any acute hazards related to the propylene glycol in the formulation.

Reported to cause central nervous system depression (anesthesia, dizziness, confusion), headache and nausea.

Chronic dietary exposure caused kidney and liver injury in experimental animals.

Target Organs

Active Ingredients

Acibenzolar-S-Methyl: Blood, liver, spleen

Chlorothalonil: Lung, kidney

Inert Ingredients

Propylene Glycol: Nervous system, kidney, liver

12. ECOLOGICAL INFORMATION

Eco-Acute Toxicity

Chlorothalonil:

Green Algae 5-day EC50 190 ppb

Bird (Mallard Duck) LD50 Oral > 4640 mg/kg

Invertebrate (Water Flea) 48-hour EC50 70 ppb

Fish (Rainbow Trout) 96-hour LC50 47 ppb

Acibenzolar-S-Methyl:

Fish (Rainbow Trout) 96-hour LC50 0.88 ppm

Invertebrate (Water Flea) Daphnia Magna 48-hour EC50 2.9 ppm

Green Algae 72-hour EC50 80.1 ppm

Bird (Bobwhite Quail) 14-day LD50 > 2000 mg/kg

DACONIL ACTION

Date: 2/5/2014

Replaces: 1/16/2014

Environmental Fate

Acibenzolar-S-Methyl:

The information presented here is for the active ingredient, acibenzolar-s-methyl.

Low bioaccumulation potential. Not persistent in soil or water. Low mobility in soil. Sinks in water (after 24 h).

Chlorothalonil:

The information presented here is for the active ingredient, chlorothalonil.

Low bioaccumulation potential. Not persistent in soil or water. Low mobility in soil. Sinks in water (after 24 h).

13. DISPOSAL CONSIDERATIONS

Disposal:

Do not reuse product containers. Dispose of product containers, waste containers, and residues according to local, state, and federal health and environmental regulations.

Characteristic Waste: Not Applicable

Listed Waste: Not Applicable

14. TRANSPORT INFORMATION

DOT Classification

Ground Transport - NAFTA

Not regulated.

Tank Truck: Environmentally Hazardous Substance, Liquid, N.O.S. (Chlorothalonil), Marine Pollutant

Hazard Class: Class 9

Identification Number: UN 3082

Packing Group: PG III

Comments

Water Transport - International

Proper Shipping Name: Environmentally Hazardous Substance, Liquid, N.O.S. (Chlorothalonil), Marine Pollutant

Hazard Class: Class 9

Identification Number: UN 3082

Packing Group: PG III

Air Transport

Proper Shipping Name: Environmentally Hazardous Substance, Liquid, N.O.S. (Chlorothalonil)

Hazard Class: Class 9

Identification Number: UN 3082

Packing Group: PG III

15. REGULATORY INFORMATION

Pesticide Registration:

This chemical is a pesticide product registered by the Environmental Protection Agency and is subject to certain labeling requirements under federal pesticide law. These requirements differ from the classification criteria and hazard information required for safety data sheets, and for workplace labels of non-pesticide chemicals. Following is the hazard information as required on the pesticide label:

Warning: Causes substantial but temporary eye injury. Harmful if swallowed May be fatal if inhaled. Prolonged or frequently repeated skin contact may cause allergic reactions in some individuals.

EPA Registration Number(s):

DACONIL ACTION

Date: 2/5/2014
 Replaces: 1/16/2014

100-1364

EPCRA SARA Title III Classification:

Section 311/312 Hazard Classes: Acute Health Hazard
 Chronic Health Hazard

Section 313 Toxic Chemicals: Chlorothalonil (53.94%) (CAS No. 1897-45-6)

California Proposition 65:

This product contains a chemical known to the State of California to cause cancer.

CERCLA/SARA 304 Reportable Quantity (RQ):

None

RCRA Hazardous Waste Classification (40 CFR 261):

Not Applicable

TSCA Status:

Exempt from TSCA, subject to FIFRA

16. OTHER INFORMATION

NFPA Hazard Ratings

Health: 2
 Flammability: 1
 Instability: 0

HMIS Hazard Ratings

Health: 2
 Flammability: 1
 Reactivity: 0

0	Minimal
1	Slight
2	Moderate
3	Serious
4	Extreme

Syngenta Hazard Category: C,S

For non-emergency questions about this product call:

1-800-334-9481

Original Issued Date: 5/3/2011

Revision Date: 2/5/2014

Replaces: 1/16/2014

Section(s) Revised: 2

The information and recommendations contained herein are based upon data believed to be correct. However, no guarantee or warranty of any kind, expressed or implied, is made with respect to the information contained herein.



Material Safety Data Sheet

BAYER ADVANCED DISEASE CONTROL FOR ROSES, FLOWERS & SHRUBS CONCENTRATE

MSDS Number: 102000012168

MSDS Version 2.0

Revision Date: 08/31/2005

SECTION 1. CHEMICAL PRODUCT AND COMPANY INFORMATION

Product Name	BAYER ADVANCED DISEASE CONTROL FOR ROSES, FLOWERS & SHRUBS CONCENTRATE
MSDS Number	102000012168
EPA Registration No.	72155-14
Product Use	Systemic fungicide cures and prevents most common plant diseases such as black spot, powdery mildew and rust.

Bayer Environmental Science
2 T.W. Alexander Drive
Research Triangle PK, NC 27709
USA

For MEDICAL, TRANSPORTATION or other EMERGENCY call 1-800-334-7577 (24 hours/day)
For Product Information call 1-800-331-2867

SECTION 2. COMPOSITION/INFORMATION ON INGREDIENTS

<u>Hazardous Component Name</u>	<u>CAS-No.</u>	<u>Average % by Weight</u>
Tebuconazole	107534-96-3	2.90
1,2-Propanediol	57-55-6	10.00

SECTION 3. HAZARDS IDENTIFICATION

NOTE: Please refer to Section 11 for detailed toxicological information.

Emergency Overview Caution! Harmful if swallowed, inhaled or absorbed through the skin. Avoid contact with skin, eyes and clothing. Do not breathe vapours or spray mist. Wash thoroughly with soap and water after handling.

Physical State slightly viscous liquid

Routes of Exposure Ingestion, Inhalation, Eye contact, Skin Absorption

Immediate Effects

Skin Harmful if absorbed through skin. May cause slight irritation. Avoid contact with skin and clothing.

Ingestion Harmful if swallowed. Do not take internally.

Inhalation Harmful if inhaled. Do not breathe vapours or spray mist.

SECTION 4. FIRST AID MEASURES



Material Safety Data Sheet

MSDS Number: 102000012168
MSDS Version 2.0

**BAYER ADVANCED DISEASE CONTROL FOR ROSES,
FLOWERS & SHRUBS CONCENTRATE**

General	Have the product container or label with you when calling a poison control center or doctor or going for treatment.
Eye	Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Call a poison control center or doctor for treatment advice.
Skin	Take off all contaminated clothing immediately. Rinse immediately with plenty of water for at least 15 minutes. Call a poison control center or doctor for treatment advice.
Ingestion	Call a poison control center or doctor immediately for treatment advice. Have person sip a glass of water if able to swallow. DO NOT induce vomiting unless directed to do so by a physician or poison control center. Never give anything by mouth to an unconscious person. Do not leave victim unattended.
Inhalation	Move to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth if possible. Call a poison control center or doctor for further treatment advice.
Notes to Physician Treatment	There is no specific antidote. Appropriate supportive and symptomatic treatment as indicated by the patient's condition is recommended.

SECTION 5. FIRE FIGHTING MEASURES

Flash Point	> 93.3 °C / > 199.9 °F Method: Setaflash
Suitable Extinguishing Media	dry chemical, foam
Fire Fighting Instructions	Keep out of smoke. Fight fire from upwind position. Dike area to prevent runoff and contamination of water sources. Equipment or materials involved in pesticide fires may become contaminated. Wear self-contained breathing apparatus and protective suit.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal Precautions	Keep unauthorized people away. Isolate hazard area. Avoid contact with spilled product or contaminated surfaces.
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Material Safety Data Sheet

MSDS Number: 102000012168
MSDS Version 2.0

**BAYER ADVANCED DISEASE CONTROL FOR ROSES,
FLOWERS & SHRUBS CONCENTRATE**

Methods for Cleaning Up Take up with absorbent material (e.g. sand, earth or a proprietary absorbent material). Keep in suitable, closed containers for disposal. Clean contaminated floors and objects thoroughly, observing environmental regulations.

Additional Advice Do not allow material to enter streams, sewers, or other waterways or contact vegetation. Use personal protective equipment.

SECTION 7. HANDLING AND STORAGE

Handling Procedures Read label carefully before use.

Storing Procedures Store in original container and out of the reach of children, preferably in a locked storage area. Do not freeze.

SECTION 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

General Protection There are no known hazards associated with this product when used according to the label directions. At the same time, the following guidelines should be used.

Avoid inhalation of vapour or mist. Avoid contact with skin and eyes.

Wash hands thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco, or using the toilet.

Do not allow children and pets to enter the treated area until it has dried.

Eye/Face Protection protective eyewear.

Hand Protection rubber gloves

Body Protection Wear long-sleeved shirt and long pants and shoes plus socks.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State slightly viscous liquid

pH 5.0 - 8.0

Density 0.989 g/ml at 20 °C

Viscosity 400 - 1,000 mPa.s at 25 °C

SECTION 10. STABILITY AND REACTIVITY



Material Safety Data Sheet

**BAYER ADVANCED DISEASE CONTROL FOR ROSES,
FLOWERS & SHRUBS CONCENTRATE**

MSDS Number: 102000012168
MSDS Version 2.0

Chemical Stability Stable under normal conditions.

SECTION 11. TOXICOLOGICAL INFORMATION

Acute toxicity studies have not been performed on this product as formulated. The acute toxicology information provided below is from a similar formulation containing a higher percentage of the active ingredient, tebuconazole. The non-acute information pertains to the active ingredient, tebuconazole.

Acute Oral Toxicity male/female rat: LD50: > 2,000 mg/kg

Acute Dermal Toxicity male/female rat: LD50: > 4,000 mg/kg

Acute Inhalation Toxicity male/female rat: LC50: > 1.975 mg/l
Exposure time: 4 h
Determined in the form of liquid aerosol.

male/female rat: LC50: > 7.9 mg/l
Exposure time: 1 h
Determined in the form of liquid aerosol.
Extrapolated from the 4 hr LC50.

Skin Irritation rabbit: slight irritation

Eye Irritation rabbit: non-irritant

Sensitization guinea pig: Non-sensitizing

Subchronic Toxicity In a 3 week dermal toxicity study, rabbits treated with tebuconazole showed no local or systemic effects at levels up to and including 1000 mg/kg, the limit dose.

In a 3 week inhalation study, rats exposed to tebuconazole exhibited liver enzyme effects at the highest concentration tested (155.8 mg/m³).

Chronic Toxicity In chronic dietary studies in rats and dogs treated with tebuconazole, effects on the liver, spleen, adrenals and/or eyes occurred at high doses.

Assessment Carcinogenicity

Tebuconazole gave no evidence of a carcinogenic potential in an oncogenicity study in rats, however, in a study using mice there was an increased incidence of hepatocellular neoplasms at a dose level approximately three-fold greater than the maximum tolerated dose (MTD).

- ACGIH**
None.
- NTP**
None.
- IARC**
None.



Material Safety Data Sheet

MSDS Number: 102000012168
MSDS Version 2.0

**BAYER ADVANCED DISEASE CONTROL FOR ROSES,
FLOWERS & SHRUBS CONCENTRATE**

OSHA
None.

**Reproductive &
Developmental Toxicity**

REPRODUCTION: In a two generation study in rats treated with tebuconazole, smaller litters and decreased pup body weights were observed in conjunction with maternal toxicity at the highest concentration tested (1000 ppm).

DEVELOPMENTAL TOXICITY: Tebuconazole produced teratogenic effects in conjunction with maternal toxicity in mice and rabbits via oral and/or dermal exposure. When tested in the rat, developmental effects were observed in conjunction with maternal toxicity via oral exposure. Teratogenic effects were not observed in the rat following either route of exposure.

Neurotoxicity

In an acute oral neurotoxicity screening study in rats, tebuconazole produced transient neurobehavioral effects without correlating morphological changes in neural tissues.

In a subchronic dietary neurotoxicity screening study in rats, tebuconazole did not produce any neurobehavioral symptoms or any microscopic lesions in neural tissues or skeletal muscle.

In a one-generation developmental neurotoxicity study in rats, dietary concentrations of tebuconazole administered to the dams during gestation and lactation did not cause any specific neurobehavioral effects in the offspring. Clinical signs of toxicity, as well as, developmental toxicity were observed in the offspring, but only in conjunction with maternal toxicity.

Mutagenicity

Numerous in vitro and in vivo mutagenicity studies have been conducted on tebuconazole all of which were negative.

SECTION 12. ECOLOGICAL INFORMATION

**Environmental
Precautions**

This product is toxic to aquatic invertebrates. Do not apply directly to water. Drift or runoff may harm aquatic invertebrates. Do not contaminate surface or ground water by cleaning equipment or disposal of wastes, including equipment wash water.



Material Safety Data Sheet

**BAYER ADVANCED DISEASE CONTROL FOR ROSES,
FLOWERS & SHRUBS CONCENTRATE**

MSDS Number: 102000012168
MSDS Version 2.0

SECTION 13. DISPOSAL CONSIDERATIONS

**General Disposal
Guidance**

Do not re-use empty containers. Place empty container in trash.

It is best to use all of the product in accordance with label directions. If it is necessary to dispose of unused product, please follow any applicable state or local guidelines. Follow container label instructions for disposal of wastes generated during use in compliance with the product label. Never place unused product down any indoor or outdoor drain.

SECTION 14. TRANSPORT INFORMATION

TRANSPORTATION CLASSIFICATION:

Not regulated for transportation

FREIGHT CLASSIFICATION:

Insecticides or Fungicides, N.O.I.; other than poison

SECTION 15. REGULATORY INFORMATION

EPA Registration No. 72155-14

US Federal Regulations

TSCA list

1,2-Propanediol 57-55-6

US. Toxic Substances Control Act (TSCA) Section 12(b) Export Notification (40 CFR 707, Subpt D)

None.

SARA Title III - Section 302 - Notification and Information

None.

SARA Title III - Section 313 - Toxic Chemical Release Reporting

None.

US States Regulatory Reporting

CA Prop65

This product does not contain any substances known to the State of California to cause cancer.

This product does not contain any substances known to the State of California to cause reproductive harm.

US State Right-To-Know Ingredients

1,2-Propanediol 57-55-6 MN, RI

Canadian Regulations

Canadian Domestic Substance List

1,2-Propanediol 57-55-6



Material Safety Data Sheet

**BAYER ADVANCED DISEASE CONTROL FOR ROSES,
FLOWERS & SHRUBS CONCENTRATE**

MSDS Number: 102000012168
MSDS Version 2.0

Environmental

CERCLA

None.

Clean Water Section 307 Priority Pollutants

None.

Safe Drinking Water Act Maximum Contaminant Levels

None.

International Regulations

European Inventory of Existing Commercial Substances (EINECS)

1,2-Propanediol

57-55-6

SECTION 16. OTHER INFORMATION

NFPA 704 (National Fire Protection Association):

Health - 2 Flammability - 1 Reactivity - 0 Others - none

0 = minimal hazard, 1 = slight hazard, 2 = moderate hazard, 3 = severe hazard, 4 = extreme hazard

Reason to Revise: Re-numbered due to system update; Updated sections as needed.

Revision Date: 08/31/2005

This information is provided in good faith but without express or implied warranty. The customer assumes all responsibility for safety and use not in accordance with label instructions. The product names are registered trademarks of Bayer.

Safety Data Sheet



Monterey Fungi-Fighter

Date: 5/28/2015
Replaces: 7/28/2009

1. PRODUCT IDENTIFICATION

Product identifier on label: **Monterey Fungi-Fighter**
EPA Reg. No. 100-773-54705
Use: Fungicide
Distributor: Lawn and Garden Products, Inc.
PO Box 35000
Fresno, CA 93745
Distributor Phone: 1-559-499-2100
Emergency Phone: Chemtrec® 24(hr) - (800) 424-9300

2. HAZARDS IDENTIFICATION

Classifications: Eye Damage/Irritation: Category 2A
Signal Word (OSHA): Warning
Hazard Statements: Causes serious eye irritation

Hazard Symbols:



Precautionary Statements: Wash hands and face thoroughly after handling.
Wear eye protection.
If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
If eye irritation persists: Get medical advice.

Other Hazard Statements: None

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	Common Name	CAS Number	Concentration
Tetrahydrofurfuryl Alcohol (THFA)	Tetrahydrofurfuryl Alcohol (THFA)	97-99-4	Trade Secret
Other ingredients	Other ingredients	Trade Secret	<98.45%
1-[[2-(2,4-dichlorophenyl)-4-propyl-1,3-dioxolan-2-yl]methyl]-1H-1,2,4-triazole	Propiconazole	60207-90-1	1.55%

Ingredients not precisely identified are proprietary or non-hazardous. Values are not product specifications.

Safety Data Sheet

Monterey Fungi-Fighter

Date: 5/28/2015

Replaces: 7/28/2009

4. FIRST AID MEASURES

Have the product container, label or Safety Data Sheet with you when calling poison control, or doctor. You may also call the National Pesticide Information Center at 1-800-858-7378 or CHEMTREC at 1-800-424-9300.

- Ingestion: If swallowed: Call a poison control center or doctor immediately for treatment advice. Do not give any liquid to the person. Do not induce vomiting unless told to do so after calling 800-888-8372 or by a poison control center or doctor. Do not give anything by mouth to an unconscious person.
- Eye Contact: If in eyes: Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after 5 minutes, then continue rinsing eye. Call a poison control center or doctor for treatment advice.
- Skin Contact: If on skin or clothing: Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call a poison control center or doctor for treatment advice.
- Inhalation: If inhaled: Move person to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth if possible. Call poison control center or doctor for further treatment advice.

Most important symptoms/effects:

Eye irritation

Indication of immediate medical attention and special treatment needed:

There is no specific antidote if this product is ingested.

Treat symptomatically.

5. FIRE FIGHTING MEASURES

Suitable (and unsuitable) extinguishing media:

Use dry chemical, foam or CO2 extinguishing media. If water is used to fight fire, dike and collect runoff.

Specific Hazards:

During a fire, irritating and possibly toxic gases may be generated by thermal decomposition or combustion.

Special protective equipment and precautions for firefighters:

Wear full protective clothing and self-contained breathing apparatus. Evacuate nonessential personnel from the area to prevent human exposure to fire, smoke, fumes or products of combustion.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment, and emergency procedures:

Follow exposure controls/personal protection outlined in Section 8.

Methods and materials for containment and cleaning up:

Control the spill at its source. Contain the spill to prevent from spreading or contaminating soil or from entering sewage and drainage systems or any body of water. Clean up spills immediately, observing precautions outlined in Section 8. Cover entire spill with absorbing material and place into compatible disposal container. Scrub area with hard water detergent (e.g. commercial products such as Tide, Joy, Spic and Span). Pick up wash liquid with additional absorbent and place into compatible disposal container. Once all material is cleaned up and placed in a disposal container, seal container and arrange for disposition.

Safety Data Sheet

Monterey Fungi-Fighter

Date: 5/28/2015
Replaces: 7/28/2009

7. HANDLING AND STORAGE

Precautions for safe handling:

Store the material in a well-ventilated, secure area out of reach of children and domestic animals. Do not store food, beverages or tobacco products in the storage area. Prevent eating, drinking, tobacco use, and cosmetic application in areas where there is a potential for exposure to the material. Wash thoroughly with soap and water after handling.

Conditions for safe storage, including any incompatibilities:

Not Applicable

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

THE FOLLOWING RECOMMENDATIONS FOR EXPOSURE CONTROLS/PERSONAL PROTECTION ARE INTENDED FOR THE MANUFACTURE, FORMULATION AND PACKAGING OF THIS PRODUCT.

FOR COMMERCIAL APPLICATIONS AND/OR ON-FARM APPLICATIONS CONSULT THE PRODUCT LABEL.

Occupational Exposure Limits:

Chemical Name	OSHA PEL	ACGIH TLV	Other	Source
Tetrahydrofurfuryl Alcohol (THFA)	Not Established	Not Established	0.5 ppm TWA	AIHA
Other ingredients	Not Applicable	Not Applicable	Not Applicable	Not Applicable
Propiconazole	Not Established	Not Established	5 mg/m ³ TWA	Syngenta

Appropriate engineering controls:

Use effective engineering controls to comply with occupational exposure limits (if applicable).

Individual protection measures:

Ingestion:

Prevent eating, drinking, tobacco usage and cosmetic application in areas where there is a potential for exposure to the material. Wash thoroughly with soap and water after handling.

Eye Contact:

Where eye contact is likely, use chemical splash goggles. Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower.

Skin Contact:

Where contact is likely, wear chemical-resistant gloves (such as barrier laminate, butyl rubber, nitrile rubber, neoprene rubber, polyvinyl chloride [PVC] or Viton), coveralls, socks and chemical-resistant footwear.

Inhalation:

A respirator is not normally required when handling this substance. Use effective engineering controls to comply with occupational exposure limits.

In case of emergency spills, use a NIOSH certified respirator with any R, P or HE filter.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance: Clear yellow-amber liquid

Odor: Similar to latex

Odor Threshold: Not Available

pH: 6 - 8.5 (1% solution in H₂O @ 77°F (25°C))

Melting point/freezing point: Not Applicable

Safety Data Sheet

Monterey Fungi-Fighter

Date: 5/28/2015

Replaces: 7/28/2009

Initial boiling point and boiling range: Not Available
Flash Point (Test Method): > 200°F (Pensky-Martens CC)
Flammable Limits (% in Air): Not Available
Flammability: Not Applicable
Vapor Pressure: Propiconazole 4.2 x 10⁽⁻⁷⁾ mmHg @ 77°F (25°C)
Vapor Density: Not Available
Relative Density: 1.0097 g/cm³ (typical)
Solubility (ies): Propiconazole 0.1 g/l @ 68°F (20°C)
Partition coefficient: n-octanol/water: Not Available
Autoignition Temperature: Not Available
Decomposition Temperature: Not Available
Viscosity: Not Available
Other: None

10. STABILITY AND REACTIVITY

Reactivity: Not reactive.
Chemical stability: Stable under normal use and storage conditions.
Possibility of hazardous reactions: Will not occur.
Conditions to Avoid: None known.
Incompatible materials: None known.
Hazardous Decomposition Products: None known.

11. TOXICOLOGICAL INFORMATION

Health effects information

Likely routes of exposure: Dermal, Inhalation

Symptoms of exposure: Eye irritation

Delayed, immediate and chronic effects of exposure: Eye irritation

Numerical measures of toxicity (acute toxicity/irritation studies (finished product))

Ingestion:	Oral (LD50 Rabbit) :	4340 mg/kg body weight (data based on similar formulation[s])
Dermal:	Dermal (LD50 Rat) :	> 2020 mg/kg body weight (data based on similar formulation[s])
Inhalation:	Inhalation (LC50 Rat) :	> 2.6 mg/l air - 4 hours (data based on similar formulation[s])
Eye Contact:	Moderately Irritating (Rabbit) (data based on similar formulation[s])	

Safety Data Sheet

Monterey Fungi-Fighter

Date: 5/28/2015

Replaces: 7/28/2009

Skin Contact: Non-Irritating (Rabbit) (data based on similar formulation[s])

Skin Sensitization: Not a Sensitizer (Guinea Pig) (data based on similar formulation[s])

Reproductive/Developmental Effects

Propiconazole: None observed.

Chronic/Subchronic Toxicity Studies

Propiconazole: None observed.

Carcinogenicity

Propiconazole: Increased hepatocellular adenomas, combined adenomas/carcinomas, and hepatocellular carcinomas observed in male mice in a chronic oral feeding study. However, animals in the high dose group for this study showed excessive toxicity; furthermore, the high dose exceeded the Maximum Tolerated Dose determined in the 90-day range finding study. No treatment-related tumors were seen in female mice in this mouse chronic feeding study. No tumors were noted in a chronic rat study.

Chemical Name	NTP/IARC/OSHA Carcinogen
---------------	--------------------------

Tetrahydrofurfuryl Alcohol (THFA)	No
-----------------------------------	----

Other ingredients	No
-------------------	----

1-[[2-(2,4-dichlorophenyl)-4-propyl-1,3-dioxolan-2-yl]methyl]-1H-1,2,4-triazole	No
---	----

Other Toxicity Information

None

Toxicity of Other Components

Other ingredients

Not Applicable

Tetrahydrofurfuryl Alcohol (THFA)

May be harmful if swallowed. Causes respiratory tract irritation. Causes skin irritation. May cause digestive tract irritation. Causes severe eye irritation. Inhalation overexposure may cause dizziness, incoordination and unconsciousness. Chronic overexposure may affect the kidney.

Target Organs

Active Ingredients

Propiconazole: Liver

Inert Ingredients

Other ingredients: Not Applicable

Tetrahydrofurfuryl Alcohol (THFA): Digestive tract, respiratory tract, skin, eye, CNS, kidney

12. ECOLOGICAL INFORMATION

Eco-Acute Toxicity

Propiconazole:

Fish (Rainbow Trout) 96-hour LC50 0.83 ppm

Invertebrate (Water Flea) 48-hour EC50 3.2 ppm

Green Algae 9-day EC50 0.72 ppm

Bird (Mallard Duck) 14-day LD50 2510 mg/kg

Safety Data Sheet

Monterey Fungi-Fighter

Date: 5/28/2015

Replaces: 7/28/2009

Environmental Fate

Propiconazole:

The information presented here is for the active ingredient, propiconazole.

Low bioaccumulation potential. Not persistent in soil. Stable in water. Low mobility in soil. Sinks in water (after 24 h).

13. DISPOSAL CONSIDERATIONS

Disposal:

Do not reuse product containers. Dispose of product containers, waste containers, and residues according to local, state, and federal health and environmental regulations.

Characteristic Waste: Not Applicable

Listed Waste: Not Applicable

14. TRANSPORT INFORMATION

DOT Classification

Ground Transport - NAFTA

Not regulated by US DOT.

Note: Packages imported into the US and packages prepared for export will be shipped under the IMDG (water) Classification.

Air Transport - NAFTA

Not regulated by US DOT.

Note: Packages imported into the US and packages prepared for export will be shipped under the IMDG (water) Classification.

Comments

Water Transport - International

Proper Shipping Name: Environmentally Hazardous Substance, Liquid, N.O.S. (Propiconazole), Marine Pollutant

Hazard Class: Class 9

Identification Number: UN 3082

Packing Group: PG III

Air Transport - International

Proper Shipping Name: Environmentally Hazardous Substance, Liquid, N.O.S. (Propiconazole), Marine Pollutant

Hazard Class: Class 9

Identification Number: UN 3082

Packing Group: PG III

Note: Special Provision A97; Packing Instructions 914; Inner max. 30 liter; Single max. 450 liter

15. REGULATORY INFORMATION

Pesticide Registration:

This chemical is a pesticide product registered by the Environmental Protection Agency and is subject to certain labeling requirements under federal pesticide law. These requirements differ from the classification criteria and hazard information required for safety data sheets, and for workplace labels of non-pesticide chemicals. Following is the hazard information as required on the pesticide label:

Warning: Causes substantial, but temporary eye injury. Do not get in eyes. Wear goggles or safety glasses. Harmful if swallowed, inhaled, or absorbed through skin. Avoid contact with skin or clothing. Avoid breathing vapor or spray mist. Wash thoroughly with soap and water after handling. Remove contaminated clothing and wash before reuse.

Safety Data Sheet

Monterey Fungi-Fighter

Date: 5/28/2015
Replaces: 7/28/2009

EPA Registration Number(s):
100-773-54705

EPCRA SARA Title III Classification:

Section 311/312 Hazard Classes: Acute Health Hazard

Section 313 Toxic Chemicals: Propiconazole 1.55% (CAS No. 60207-90-1)

CERCLA/SARA 304 Reportable Quantity (RQ):

None

RCRA Hazardous Waste Classification (40 CFR 261):

Not Applicable

TSCA Status:

Exempt from TSCA, subject to FIFRA

16. OTHER INFORMATION

NFPA Hazard Ratings

Health: 2
Flammability: 1
Instability: 0

HMIS Hazard Ratings

Health: 1
Flammability: 1
Reactivity: 0

0	Minimal
1	Slight
2	Moderate
3	Serious
4	Extreme
*	Chronic

Revision Date: 5/28/2015

Section(s) Revised: 1-16

Replaces: 7/28/2009

The information and recommendations contained herein are based upon data believed to be correct. However, no guarantee or warranty of any kind, expressed or implied, is made with respect to the information contained herein.





Material Safety Data Sheet

**BAYER ADVANCED FUNGUS CONTROL FOR LAWNS
READY-TO-SPRAY**

MSDS Number: 102000021987
MSDS Version 1.0
Revision Date: 09/21/2009

SECTION 1. CHEMICAL PRODUCT AND COMPANY INFORMATION

Product Name BAYER ADVANCED FUNGUS CONTROL FOR LAWNS READY-TO-SPRAY
MSDS Number 102000021987
EPA Registration No. 72155-93

Bayer Environmental Science
2 T.W. Alexander Drive
Research Triangle PK, NC 27709
USA

For MEDICAL, TRANSPORTATION or other EMERGENCY call: 1-800-334-7577 (24 hours/day)
For Product Information call: 1-800-331-2867

SECTION 2. HAZARDS IDENTIFICATION

NOTE: Please refer to Section 11 for detailed toxicological information.

Emergency Overview Caution! May be harmful by inhalation, ingestion, skin adsorption. May cause eye irritation. May cause skin irritation. Avoid breathing spray mist. Avoid contact with skin, eyes and clothing. Wash thoroughly with soap and water after handling.

Physical State liquid

Appearance white to off-white

Routes of Exposure Eye contact, Skin contact, Inhalation, Ingestion

Immediate Effects

Eye May cause eye irritation. Avoid contact with eyes.

Skin Prolonged or frequently repeated skin contact may cause allergic reactions in some individuals. May cause slight irritation. Avoid contact with skin and clothing.

Ingestion May be harmful if swallowed. Do not take internally.

Inhalation May be harmful if inhaled. Avoid breathing spray mist.

Chronic or Delayed Long-Term This product or its components may have target organ effects. This product or its components may have long term (chronic) health effects.

Potential Environmental Effect Toxic to fish and aquatic organisms.



Material Safety Data Sheet

**BAYER ADVANCED FUNGUS CONTROL FOR LAWNS
READY-TO-SPRAY**

MSDS Number: 102000021987
MSDS Version 1.0

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

<u>Hazardous Component Name</u>	<u>CAS-No.</u>	<u>Average % by Weight</u>
Propiconazole	60207-90-1	2.42
Castor oil, ethoxylated	61791-12-6	3.75

SECTION 4. FIRST AID MEASURES

General	When possible, have the product container or label with you when calling a poison control center or doctor or going for treatment.
Eye	Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Call a physician or poison control center immediately.
Skin	Take off contaminated clothing and shoes immediately. Wash off immediately with plenty of water for at least 15 minutes. Call a physician or poison control center immediately.
Ingestion	Call a physician or poison control center immediately. Rinse out mouth and give water in small sips to drink. DO NOT induce vomiting unless directed to do so by a physician or poison control center. Never give anything by mouth to an unconscious person. Do not leave victim unattended.
Inhalation	Move to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth if possible. Call a physician or poison control center immediately.
Notes to Physician Treatment	Treat symptomatically. There is no specific antidote.

SECTION 5. FIRE FIGHTING MEASURES

Flash point	> 93.4 °C / 200.1 °F
Suitable Extinguishing Media	Water spray, Foam, Carbon dioxide (CO2), Dry chemical
Fire Fighting Instructions	Keep out of smoke. Fight fire from upwind position. Cool closed containers/tanks exposed to fire with water spray. Do not allow run-off from fire fighting to enter drains or water courses. Firefighters should wear NIOSH approved self-contained breathing apparatus and full protective clothing.



Material Safety Data Sheet

**BAYER ADVANCED FUNGUS CONTROL FOR LAWNS
READY-TO-SPRAY**

MSDS Number: 102000021987
MSDS Version 1.0

SECTION 6. ACCIDENTAL RELEASE MEASURES

- Personal Precautions** Keep unauthorized people away. Isolate hazard area. Avoid contact with spilled product or contaminated surfaces.

- Methods for cleaning up** Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder). Collect and transfer the product into a properly labelled and tightly closed container. Clean contaminated floors and objects thoroughly, observing environmental regulations.

- Additional Advice** Use personal protective equipment. Do not allow to enter soil, waterways or waste water canal.

SECTION 7. HANDLING AND STORAGE

- Handling Procedures** Maintain exposure levels below the exposure limit through the use of general and local exhaust ventilation. Handle and open container in a manner as to prevent spillage.

- Storing Procedures** Store in original container and out of the reach of children, preferably in a locked storage area. Protect from freezing.

SECTION 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

- General Protection** There are no known hazards associated with this product when used according to the label directions. The following guidelines should be followed.
 - Avoid inhalation of vapour or mist. Avoid contact with skin and eyes.
 - Wash hands thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco, using the toilet or applying cosmetics.
 - Do not allow children or pets to enter the treated area until it has dried.

Exposure Limits

Propiconazole	60207-90-1	TX ESL	ST ESL	70 ug/m3
		TX ESL	AN ESL	7 ug/m3
Castor oil, ethoxylated	61791-12-6	TX ESL	ST ESL	1000 ug/m3
		TX ESL	AN ESL	100 ug/m3

**Material Safety Data Sheet****BAYER ADVANCED FUNGUS CONTROL FOR LAWNS
READY-TO-SPRAY**MSDS Number: 102000021987
MSDS Version 1.0**SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES**

Appearance	white to off-white
Physical State	liquid
pH	approx. 7.8
Density	approx. 1.01 g/cm ³ at 20 °C

SECTION 10. STABILITY AND REACTIVITY

Conditions to Avoid	Freezing Elevated temperatures
Hazardous Reactions	No hazardous reactions when stored and handled according to prescribed instructions.
Chemical Stability	Stable under normal conditions.

SECTION 11. TOXICOLOGICAL INFORMATION

Only acute toxicity studies have been performed on the formulated product. The non-acute information pertains to the technical-grade active ingredient, propiconazole.

Acute Oral Toxicity	female rat: LD50: > 5,000 mg/kg
Acute Dermal Toxicity	male/female combined rat: LD50: > 5,000 mg/kg
Acute Inhalation Toxicity	female rat: LC50: > 2.04 mg/l Exposure time: 4 h Determined in the form of liquid aerosol. female rat: LC50: > 8.16 mg/l Exposure time: 1 h Determined in the form of liquid aerosol. Extrapolated from the 4 hr LC50.
Skin Irritation	rabbit: No skin irritation.
Eye Irritation	rabbit: No eye irritation.
Sensitization	guinea pig: Non-sensitizing.
Chronic Toxicity	Propiconazole caused liver effects and/or stomach irritations in chronic studies in rodents and dogs.



Material Safety Data Sheet

**BAYER ADVANCED FUNGUS CONTROL FOR LAWNS
READY-TO-SPRAY**

MSDS Number: 102000021987
MSDS Version 1.0

Assessment Carcinogenicity

Propiconazole has been classified as a Group C (possible human carcinogen) chemical based on liver tumors in male mice. In lifetime feeding studies, propiconazole was not carcinogenic to rats or to female mice.

ACGIH

None.

NTP

None.

IARC

None.

OSHA

None.

Reproductive toxicity

REPRODUCTION: Propiconazole was not considered a primary reproductive toxicant in a two-generation study in rats.

DEVELOPMENTAL TOXICITY: Propiconazole is considered a developmental toxicant based on developmental toxicity studies in rats.

Neurotoxicity

Propiconazole caused minimal neurobehavioral effects without correlating neuropathological changes in neurotoxicity studies in rats.

Mutagenicity

Propiconazole was not mutagenic or genotoxic in a battery of in vitro and in vivo tests.

SECTION 12. ECOLOGICAL INFORMATION

**Environmental
Precautions**

Drift and runoff from treated areas may be hazardous to aquatic organisms in adjacent sites. Do not allow to get into surface water, drains and ground water. Do not apply when weather conditions favor runoff or drift. Do not contaminate surface or ground water by cleaning equipment or disposal of wastes, including equipment wash water. Apply this product as specified on the label.



Material Safety Data Sheet

**BAYER ADVANCED FUNGUS CONTROL FOR LAWNS
READY-TO-SPRAY**

MSDS Number: 102000021987
MSDS Version 1.0

SECTION 13. DISPOSAL CONSIDERATIONS

General Disposal Guidance It is best to use all of the product in accordance with label directions. If it is necessary to dispose of unused product, please follow container label instructions and applicable local guidelines. Never place unused product down any indoor or outdoor drain.

Container Disposal Do not re-use empty containers. Place empty container in trash.

SECTION 14. TRANSPORT INFORMATION

TRANSPORTATION CLASSIFICATION:
Not regulated for transport in the US

FREIGHT CLASSIFICATION:
Insecticides or Fungicides, N.O.I., other than poison

SECTION 15. REGULATORY INFORMATION

EPA Registration No. 72155-93

US Federal Regulations

TSCA list

Castor oil, ethoxylated 61791-12-6

US. Toxic Substances Control Act (TSCA) Section 12(b) Export Notification (40 CFR 707, Subpt D)

None.

SARA Title III - Section 302 - Notification and Information

None.

SARA Title III - Section 313 - Toxic Chemical Release Reporting

Propiconazole 60207-90-1 1.0%

US States Regulatory Reporting

CA Prop65

This product does not contain any substances known to the State of California to cause cancer.

This product does not contain any substances known to the State of California to cause reproductive harm.

US State Right-To-Know Ingredients

Propiconazole 60207-90-1 NJ

Canadian Regulations

Canadian Domestic Substance List

Castor oil, ethoxylated 61791-12-6

Environmental



Material Safety Data Sheet

**BAYER ADVANCED FUNGUS CONTROL FOR LAWNS
READY-TO-SPRAY**

MSDS Number: 102000021987
MSDS Version 1.0

CERCLA

None.

Clean Water Section 307 Priority Pollutants

None.

Safe Drinking Water Act Maximum Contaminant Levels

None.

SECTION 16. OTHER INFORMATION

NFPA 704 (National Fire Protection Association):

Health - 1 Flammability - 1 Reactivity - 0 Others - none

0 = minimal hazard, 1 = slight hazard, 2 = moderate hazard, 3 = severe hazard, 4 = extreme hazard

Reason to Revise: New Material Safety Data Sheet.

Revision Date: 09/21/2009

This information is provided in good faith but without express or implied warranty. The customer assumes all responsibility for safety and use not in accordance with label instructions. The product names are registered trademarks of Bayer.



Material Safety Data Sheet

BAYER ADVANCED FUNGUS CONTROL FOR LAWNS READY-TO-SPREAD GRANULES II

MSDS Number: 102000019484

MSDS Version 1.0

Revision Date: 04/11/2008

SECTION 1. CHEMICAL PRODUCT AND COMPANY INFORMATION

Product Name BAYER ADVANCED FUNGUS CONTROL FOR LAWNS READY-TO-SPREAD
GRANULES II

MSDS Number 102000019484

EPA Registration No. 72155-81

Bayer Environmental Science
2 T.W. Alexander Drive
Research Triangle PK, NC 27709
USA

For MEDICAL, TRANSPORTATION or other EMERGENCY call: 1-800-334-7577 (24 hours/day)
For Product Information call: 1-800-331-2867

SECTION 2. COMPOSITION/INFORMATION ON INGREDIENTS

<u>Hazardous Component Name</u>	<u>CAS-No.</u>	<u>Average % by Weight</u>
Propiconazole	60207-90-1	0.51
Calcium carbonate	1317-65-3	

SECTION 3. HAZARDS IDENTIFICATION

NOTE: Please refer to Section 11 for detailed toxicological information.

Emergency Overview Caution! Hazard to humans and domestic animals. Harmful if swallowed, inhaled or absorbed through the skin. Moderate eye irritation. Prolonged or frequently repeated skin contact may cause allergic reactions in some individuals. Avoid breathing dust. Avoid contact with skin, eyes and clothing. Wash thoroughly with soap and water after handling.

Physical State granular

Appearance grey to tan

Routes of Exposure Inhalation, Skin contact, Skin Absorption, Eye contact

Immediate Effects

Eye Causes eye irritation. Do not get in eyes.

Skin Harmful if absorbed through skin. May cause slight irritation. Repeated or prolonged skin contact may cause allergic reactions with susceptible persons.

Ingestion Harmful if swallowed. Do not take internally.

Inhalation Harmful if inhaled. Avoid breathing dust.



Material Safety Data Sheet

**BAYER ADVANCED FUNGUS CONTROL FOR LAWNS
READY-TO-SPREAD GRANULES II**

MSDS Number: 102000019484
MSDS Version 1.0

Chronic or Delayed Long-Term This product or its components may have target organ effects.

Potential Environmental Effect Toxic to fish.

SECTION 4. FIRST AID MEASURES

General When possible, have the product container or label with you when calling a poison control center or doctor or going for treatment.

Eye Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Call a physician or poison control center immediately.

Skin Take off contaminated clothing and shoes immediately. Wash off immediately with plenty of water for at least 15 minutes. Call a physician or poison control center immediately.

Ingestion Call a physician or poison control center immediately. Rinse out mouth and give water in small sips to drink. DO NOT induce vomiting unless directed to do so by a physician or poison control center. Never give anything by mouth to an unconscious person. Do not leave victim unattended.

Inhalation Move to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth if possible. Call a physician or poison control center immediately.

Notes to Physician Treatment There is no specific antidote. Appropriate supportive and symptomatic treatment as indicated by the patient's condition is recommended.

SECTION 5. FIRE FIGHTING MEASURES

Flash point not applicable

Suitable Extinguishing Media Water spray, Foam, Carbon dioxide (CO2), Dry chemical

Fire Fighting Instructions Keep out of smoke. Fight fire from upwind position. Cool closed containers/tanks exposed to fire with water spray. Do not allow water to come into direct contact with the product.

Firefighters should wear NIOSH approved self-contained breathing apparatus and full protective clothing.



Material Safety Data Sheet

**BAYER ADVANCED FUNGUS CONTROL FOR LAWNS
READY-TO-SPREAD GRANULES II**

MSDS Number: 102000019484
MSDS Version 1.0

SECTION 6. ACCIDENTAL RELEASE MEASURES

- Personal Precautions** Isolate hazard area. Keep unauthorized people away. Avoid contact with spilled product or contaminated surfaces.
- Methods for Cleaning Up** Avoid dust formation. Sweep up or vacuum up spillage and collect in suitable container for disposal. Clean contaminated floors and objects thoroughly, observing environmental regulations.
- Additional Advice** Use personal protective equipment. Do not allow to enter soil, waterways or waste water canal.

SECTION 7. HANDLING AND STORAGE

- Handling Procedures** Handle and open container in a manner as to prevent spillage.
- Storing Procedures** Store in a cool, dry place and in such a manner as to prevent cross contamination with other pesticides, fertilizers, food, and feed. Store in original container and out of the reach of children, preferably in a locked storage area.
- Work/Hygienic Procedures** Handle in accordance with good industrial hygiene and safety practice. Wash hands thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco, using the toilet or applying cosmetics.
- Remove contaminated clothing immediately and dispose of safely. Wash thoroughly and put on clean clothing.
- Remove Personal Protective Equipment (PPE) immediately after handling this product. Wash thoroughly and put on clean clothing.

SECTION 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

- General Protection** Follow all label instructions. Train employees in safe use of the product.
- Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables, use detergent and warm/tepid water. Keep and wash PPE separately from other laundry.
- Eye/Face Protection** Tightly fitting safety goggles
- Hand Protection** Chemical resistant nitrile rubber gloves
- Body Protection** Wear long-sleeved shirt and long pants and shoes plus socks.



Material Safety Data Sheet

**BAYER ADVANCED FUNGUS CONTROL FOR LAWNS
READY-TO-SPREAD GRANULES II**

MSDS Number: 102000019484
MSDS Version 1.0

Respiratory Protection When respirators are required, select NIOSH approved equipment based on actual or potential airborne concentrations and in accordance with the appropriate regulatory standards and/or industry recommendations.

Exposure Limits

Calcium carbonate	1317-65-3	NIOSH	REL	5 mg/m3
		NIOSH	REL	10 mg/m3
		OSHA Z1	PEL	5 mg/m3
		OSHA Z1	PEL	15 mg/m3
		OSHA Z1A	TWA	5 mg/m3
		OSHA Z1A	TWA	15 mg/m3
		TX ESL	ST ESL	50 ug/m3
		TX ESL	AN ESL	5 ug/m3

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	grey to tan
Physical State	granular
pH	approx. 6 - 8 (5 %)
Bulk Density	approx. 29 - 35 lb/ft ³

SECTION 10. STABILITY AND REACTIVITY

Hazardous Reactions No hazardous reactions when stored and handled according to prescribed instructions.
Stable under recommended storage conditions.

SECTION 11. TOXICOLOGICAL INFORMATION

Only acute toxicity studies have been performed on the formulated product. The non-acute information pertains to the technical-grade active ingredient, propiconazole.

Acute Oral Toxicity	female rat: LD50: > 5,000 mg/kg
Acute Dermal Toxicity	rat: LD50: > 5,000 mg/kg



MSDS Number: 102000019484
MSDS Version 1.0

Material Safety Data Sheet

BAYER ADVANCED FUNGUS CONTROL FOR LAWNS READY-TO-SPREAD GRANULES II

Acute Inhalation Toxicity	rat: LC50: > 2.5 mg/l Exposure time: 4 h Determined in the form of dust. rat: LC50: > 110 mg/l Exposure time: 1 h Determined in the form of dust. Extrapolated from the 4 hr LC50.
Skin Irritation	rabbit: Slight irritation.
Eye Irritation	rabbit: Mild eye irritation.
Sensitization	guinea pig: Non-sensitizing.
Chronic Toxicity	Propiconazole caused liver effects and/or stomach irritations in chronic studies in rodents and dogs.

Assessment Carcinogenicity

Propiconazole has been classified as a Group C (possible human carcinogen) chemical based on liver tumors in male mice. In lifetime feeding studies, propiconazole was not carcinogenic to rats or to female mice.

ACGIH

None.

NTP

None.

IARC

None.

OSHA

None.

Reproductive & Developmental Toxicity	REPRODUCTION: Propiconazole was not considered a primary reproductive toxicant in a two-generation study in rats. DEVELOPMENTAL TOXICITY: Propiconazole is considered a developmental toxicant based on developmental toxicity studies in rats.
Neurotoxicity	Propiconazole caused minimal neurobehavioral effects without correlating neuropathological changes in neurotoxicity studies in rats.
Mutagenicity	Propiconazole was not mutagenic or genotoxic in a battery of in vitro and in vivo tests.

SECTION 12. ECOLOGICAL INFORMATION



Material Safety Data Sheet

**BAYER ADVANCED FUNGUS CONTROL FOR LAWNS
READY-TO-SPREAD GRANULES II**

MSDS Number: 102000019484
MSDS Version 1.0

Environmental Precautions Do not allow to get into surface water, drains and ground water. Do not contaminate surface or ground water by cleaning equipment or disposal of wastes, including equipment wash water. Apply this product as specified on the label.

SECTION 13. DISPOSAL CONSIDERATIONS

General Disposal Guidance Dispose in accordance with all local, state/provincial and federal regulations. Never place unused product down any indoor or outdoor drain. Follow advice on product label and/or leaflet.

Container Disposal Do not re-use empty containers. Follow advice on product label and/or leaflet.

SECTION 14. TRANSPORT INFORMATION

DOT CLASSIFICATION:
Not regulated for any mode of transportation

FREIGHT CLASSIFICATION:
Insecticides or Fungicides, N.O.I.; other than liquid

SECTION 15. REGULATORY INFORMATION

EPA Registration No. 72155-81

US Federal Regulations

TSCA list

Calcium carbonate 1317-65-3

US. Toxic Substances Control Act (TSCA) Section 12(b) Export Notification (40 CFR 707, Subpt D)

None.

SARA Title III - Section 302 - Notification and Information

None.

SARA Title III - Section 313 - Toxic Chemical Release Reporting

Propiconazole 60207-90-1 1.0%

US States Regulatory Reporting

CA Prop65

This product does not contain any substances known to the State of California to cause cancer.

This product does not contain any substances known to the State of California to cause reproductive harm.

US State Right-To-Know Ingredients

Propiconazole	60207-90-1	NJ
Calcium carbonate	1317-65-3	MN, RI



Material Safety Data Sheet

**BAYER ADVANCED FUNGUS CONTROL FOR LAWNS
READY-TO-SPREAD GRANULES II**

MSDS Number: 102000019484
MSDS Version 1.0

Canadian Regulations

Canadian Domestic Substance List

None.

Environmental

CERCLA

None.

Clean Water Section 307 Priority Pollutants

None.

Safe Drinking Water Act Maximum Contaminant Levels

None.

SECTION 16. OTHER INFORMATION

NFPA 704 (National Fire Protection Association):

Health - 1 Flammability - 0 Reactivity - 0 Others - none

0 = minimal hazard, 1 = slight hazard, 2 = moderate hazard, 3 = severe hazard, 4 = extreme hazard

Reason to Revise: New Material Safety Data Sheet.

Revision Date: 04/11/2008

This information is provided in good faith but without express or implied warranty. The customer assumes all responsibility for safety and use not in accordance with label instructions. The product names are registered trademarks of Bayer.

HERITAGE® FUNGICIDE

Date: 12/8/2014
Replaces: 9/19/2012

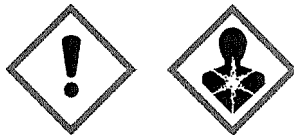
1. PRODUCT IDENTIFICATION

Product identifier on label: **HERITAGE® FUNGICIDE**
Product No.: A12704A
Use: Fungicide
Manufacturer: Syngenta Crop Protection, LLC
Post Office Box 18300
Greensboro NC 27419
Manufacturer Phone: 1-800-334-9481
Emergency Phone: 1-800-888-8372

2. HAZARDS IDENTIFICATION

Classifications: Eye Damage/Irritation: Category 2A
Carcinogenicity: Category 1A
Specific Target Organ Toxicity: Repeated Category 1
Signal Word (OSHA): Danger
Hazard Statements: Causes serious eye irritation
May cause cancer
Causes damage to organs through prolonged or repeated exposure

Hazard Symbols:



Precautionary Statements: Obtain special instructions before use.
Do not handle until all safety precautions have been read and understood.
Do not breathe mist, vapors, spray.
Wash hands and face thoroughly after handling.
Do not eat, drink or smoke when using this product.
Wear protective gloves, protective clothing, eye protection.
Wear eye protection.
If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
If eye irritation persists: Get medical advice.
If exposed or concerned: Get medical advice/attention.
Get medical advice if you feel unwell.
Store locked up.
Dispose of contents and container in accordance with local regulations.

HERITAGE® FUNGICIDE

Date: 12/8/2014

Replaces: 9/19/2012

Other Hazard Statements: May form combustible dust concentrations in air.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	Common Name	CAS Number	Concentration
Crystalline Silica, Quartz and Cristobalite	Crystalline Silica, Quartz and Cristobalite	14808-60-7	<1%
Kaolin Clay	Kaolin Clay	1332-58-7	Trade Secret
Other ingredients	Other ingredients	Trade Secret	>49%
Methyl (E)-2-[2-[6-(2-cyanophenoxy)pyrimidin-4-yloxy]phenyl]-3-methoxyacrylate	Azoxystrobin	131860-33-8	50%

Ingredients not precisely identified are proprietary or non-hazardous. Values are not product specifications.

4. FIRST AID MEASURES

Have the product container, label or Safety Data Sheet with you when calling Syngenta (800-888-8372), a poison control center or doctor, or going for treatment.

- Ingestion:** If swallowed: Call Syngenta (800-888-8372), a poison control center or doctor immediately for treatment advice. Have the person sip a glass of water if able to swallow. Do not induce vomiting unless told to do so after calling 800-888-8372 or by a poison control center or doctor. Do not give anything by mouth to an unconscious person.
- Eye Contact:** If in eyes: Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after 5 minutes, then continue rinsing eye. Call Syngenta (800-888-8372), a poison control center or doctor for treatment advice.
- Skin Contact:** If on skin or clothing: Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call Syngenta (800-888-8372), a poison control center or doctor for treatment advice.
- Inhalation:** If inhaled: Move person to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth if possible. Call Syngenta (800-888-8372), a poison control center or doctor for further treatment advice.

Most important symptoms/effects:

Eye irritation

Indication of immediate medical attention and special treatment needed:

There is no specific antidote if this product is ingested.

Treat symptomatically.

5. FIRE FIGHTING MEASURES

Suitable (and unsuitable) extinguishing media:

Use dry chemical, foam or CO2 extinguishing media. If water is used to fight fire, dike and collect runoff.

Specific Hazards:

Fire will spread by burning with flame.

During a fire, irritating and possibly toxic gases may be generated by thermal decomposition or combustion.

See also Sec. 7.

HERITAGE® FUNGICIDE

Date: 12/8/2014

Replaces: 9/19/2012

Special protective equipment and precautions for firefighters:

Wear full protective clothing and self-contained breathing apparatus. Evacuate nonessential personnel from the area to prevent human exposure to fire, smoke, fumes or products of combustion.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment, and emergency procedures:

Follow exposure controls/personal protection outlined in Section 8.

Methods and materials for containment and cleaning up:

Avoid dust formation.

Control the spill at its source. Contain the spill to prevent from spreading or contaminating soil or from entering sewage and drainage systems or any body of water. Clean up spills immediately, observing precautions outlined in Section 8. Sweep up material and place in a compatible disposal container. Scrub area with hard water detergent (e.g. commercial products such as Tide, Joy, Spic and Span). Pick up wash liquid with additional absorbent and place into compatible disposal container. Once all material is cleaned up and placed in a disposal container, seal container and arrange for disposition.

7. HANDLING AND STORAGE

Precautions for safe handling:

This material is capable of forming flammable dust clouds in air, which, if ignited, can produce a dust cloud explosion. Flames, hot surfaces, mechanical sparks and electrostatic discharges can serve as ignition sources for this material. Electrical equipment should be compatible with the flammability characteristics of this material. The flammability characteristics will be made worse if the material contains traces of flammable solvents or is handled in the presence of flammable solvents.

In general personnel handling this material and all conducting equipment should be electrically earthed or grounded. Bulk bags (FIBC) used to contain this material should be Type B, Type C or Type D. Type C bags must be electrically grounded or earthed before powder is charged to or discharged from the bag. If metal or fiber drums are used to contain this material, make certain the metal parts are bonded to the filling equipment and grounded.

This material could become charged under certain conditions such as pneumatic conveying.

Store the material in a well-ventilated, secure area out of reach of children and domestic animals. Do not store food, beverages or tobacco products in the storage area. Prevent eating, drinking, tobacco use, and cosmetic application in areas where there is a potential for exposure to the material. Wash thoroughly with soap and water after handling.

Conditions for safe storage, including any incompatibilities:

Store locked up.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

THE FOLLOWING RECOMMENDATIONS FOR EXPOSURE CONTROLS/PERSONAL PROTECTION ARE INTENDED FOR THE MANUFACTURE, FORMULATION AND PACKAGING OF THIS PRODUCT.

FOR COMMERCIAL APPLICATIONS AND/OR ON-FARM APPLICATIONS CONSULT THE PRODUCT LABEL.

Occupational Exposure Limits:

Chemical Name	OSHA PEL	ACGIH TLV	Other	Source
Crystalline Silica, Quartz and Cristobalite	10 mg/m ³ /(%SiO ₂ +2) (respirable dust)	0.025 mg/m ³ (respirable silica)	0.05 mg/m ³ (respirable dust)	NIOSH
Kaolin Clay	15 mg/m ³ TWA (total); 5 mg/m ³ TWA (respirable)	2 mg/m ³ TWA (respirable)	10 mg/m ³ TWA (total); 5 mg/m ³ TWA (respirable)	NIOSH

HERITAGE® FUNGICIDE

Date: 12/8/2014
 Replaces: 9/19/2012

Other ingredients	Not Applicable	Not Applicable	Not Applicable	Not Applicable
Azoxystrobin	Not Established	Not Established	4 mg/m ³ TWA	Syngenta

Appropriate engineering controls:

Use effective engineering controls to comply with occupational exposure limits (if applicable).

Individual protection measures:

Ingestion:

Prevent eating, drinking, tobacco usage and cosmetic application in areas where there is a potential for exposure to the material. Wash thoroughly with soap and water after handling.

Eye Contact:

Where eye contact is likely, use dust-proof chemical goggles. Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower.

Skin Contact:

Where contact is likely, wear chemical-resistant gloves (such as barrier laminate, butyl rubber, nitrile rubber, neoprene rubber, natural rubber, polyethylene, polyvinyl chloride [PVC] or Viton), coveralls, socks and chemical-resistant footwear.

Inhalation:

A particulate filter respirator may be necessary until effective engineering controls are installed to comply with occupational exposure limits. Use NIOSH certified respirator with any N, R, P or HE filter. Use a self-contained breathing apparatus in cases of emergency spills, when exposure levels are unknown, or under any circumstances where air-purifying respirators may not provide adequate protection.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance: Light beige to brown granules

Odor: No characteristic odor

Odor Threshold: Not Available

pH: 5 - 8 (w/w%)

Melting point/freezing point: 237.2 - 240.8 °F

Initial boiling point and boiling range: Not Available

Flash Point (Test Method): Not Applicable

Flammable Limits (% in Air): Not Available

Flammability: Combustible powder

Vapor Pressure: Azoxystrobin 8.25 x 10⁻¹³ mmHg @ 68°F (20°C)

Vapor Density: Not Available

Relative Density: 0.58 - 0.65 g/ml; 31.2 - 43.7 lbs./cu.ft.

Solubility (ies): Azoxystrobin 6 mg/l in water @ 68°F (20°C)

Partition coefficient: n-octanol/water: Not Available

Autoignition Temperature: Not Available

Decomposition Temperature: Not Available

Viscosity: Not Available

Other: None

HERITAGE® FUNGICIDE

Date: 12/8/2014

Replaces: 9/19/2012

10. STABILITY AND REACTIVITY

Reactivity: Not reactive.

Chemical stability: Stable under normal use and storage conditions.

Possibility of hazardous reactions: Will not occur.

Conditions to Avoid: See "Unusual Fire, Explosion and Reactivity Hazards", Sec. 5. and "Handling and Storage", Sec. 7.

Incompatible materials: None known.

Hazardous Decomposition Products: Not Available

11. TOXICOLOGICAL INFORMATION

Health effects information

Likely routes of exposure: Dermal, Inhalation

Symptoms of exposure: Eye irritation

Delayed, immediate and chronic effects of exposure: Possible carcinogenicity, Eye irritation

Numerical measures of toxicity (acute toxicity/irritation studies (finished product))

Ingestion: Oral (LD50 Rat) : > 5000 mg/kg body weight

Dermal: Dermal (LD50 Rat) : > 2000 mg/kg body weight

Inhalation: Inhalation (LC50 Rat) : > 4.67 mg/l air - 4 hours

Eye Contact: Moderately Irritating (Rabbit)

Skin Contact: Slightly Irritating (Rabbit)

Skin Sensitization: Not a Sensitizer (Guinea Pig)

Reproductive/Developmental Effects

Azoxystrobin : Did not show reproductive toxicity effects in animal experiments.

Chronic/Subchronic Toxicity Studies

Azoxystrobin : No adverse effect has been observed in chronic toxicity tests.

Carcinogenicity

Azoxystrobin : Did not show carcinogenic effects in animal experiments.

Chemical Name NTP/IARC/OSHA Carcinogen

Crystalline Silica, Quartz and Cristobalite IARC 1; ACGIH A2

Kaolin Clay No

Other ingredients No

Methyl (E)-2-[2-[6-(2-cyanophenoxy)pyrimidin-4-yloxy]phenyl]-3-methoxyacrylate No

HERITAGE® FUNGICIDE

Date: 12/8/2014

Replaces: 9/19/2012

Other Toxicity Information

None

Toxicity of Other Components

Crystalline Silica, Quartz and Cristobalite

Chronic inhalation exposure to crystalline silica is known to cause silicosis and pulmonary fibrosis in humans. Experimental animals exposed to crystalline silica developed respiratory tract cancers.

Kaolin Clay

May cause eye and respiratory tract irritation. Long-term exposure to high concentrations of this dust may produce x-ray evidence of dust in the lungs. Continued long-term exposure may affect respiratory function in some individuals.

Other ingredients

Not Applicable

Target OrgansActive Ingredients

Azoxystrobin : Liver

Inert Ingredients

Crystalline Silica, Quartz and Cristobalite: Respiratory tract

Kaolin Clay: Eye, respiratory tract, lung

Other ingredients: Not Applicable

12. ECOLOGICAL INFORMATION

Eco-Acute Toxicity

Azoxystrobin :

Fish (Rainbow Trout) 96-hour LC50 470 ppb

Green Algae 5-day EC50 106 ppb

Invertebrate (Water Flea) 48-hour EC50 259 ppb

Bird (Mallard Duck) 14-day LD50 > 250 mg/kg

Environmental Fate

Azoxystrobin :

The information presented here is for the active ingredient, azoxystrobin.

Low bioaccumulation potential. Not persistent in soil. Stable in water. Moderate mobility in soil. Sinks in water (after 24 h).

13. DISPOSAL CONSIDERATIONS

Disposal:

Do not reuse product containers. Dispose of product containers, waste containers, and residues according to local, state, and federal health and environmental regulations.

Characteristic Waste: Not Applicable

Listed Waste: Not Applicable

HERITAGE® FUNGICIDE

Date: 12/8/2014

Replaces: 9/19/2012

14. TRANSPORT INFORMATION

DOT Classification

Ground Transport - NAFTA
Not regulated

Comments

Water Transport (IMDG) - International

Proper Shipping Name: Environmentally Hazardous Substance, Solid, N.O.S. (Azoxystrobin), Marine Pollutant

Hazard Class or Division: Class 9

Identification Number: UN 3077

Packing Group: PG III

European Road/Rail (ADR/RID)

Shipping Name: Environmentally Hazardous Substance, Solid, N.O.S. (Azoxystrobin)

Hazard Class or Division: Class 9

Identification Number: UN 3077

Packing Group: PG III

Air Transport

Proper Shipping Name: Environmentally Hazardous Substance, Solid, N.O.S. (Azoxystrobin)

Hazard Class or Division: Class 9

Identification Number: UN 3077

Packing Group: PG III

15. REGULATORY INFORMATION

Pesticide Registration:

This chemical is a pesticide product registered by the Environmental Protection Agency and is subject to certain labeling requirements under federal pesticide law. These requirements differ from the classification criteria and hazard information required for safety data sheets, and for workplace labels of non-pesticide chemicals. Following is the hazard information as required on the pesticide label:

Caution: Harmful if inhaled. Irritating to eyes and skin. Dust may be irritating to nose and throat.

EPA Registration Number(s):

100-1093

EPCRA SARA Title III Classification:

Section 311/312 Hazard Classes: Acute Health Hazard
Fire Hazard

Section 313 Toxic Chemicals: None

California Proposition 65:

This Product contains trace amounts of chemicals, known to the State of California to cause cancer, as unintended impurities resulting from other entities manufacturing or processing operations which Syngenta cannot control.

CERCLA/SARA 304 Reportable Quantity (RQ):

Not Applicable

RCRA Hazardous Waste Classification (40 CFR 261):

Not Applicable

TSCA Status:

Exempt from TSCA, subject to FIFRA

HERITAGE® FUNGICIDE

Date: 12/8/2014

Replaces: 9/19/2012

16. OTHER INFORMATION

NFPA Hazard Ratings

Health: 2
Flammability: 3
Instability: 0

HMS Hazard Ratings

Health: 1
Flammability: 3
Reactivity: 0

0	Minimal
1	Slight
2	Moderate
3	Serious
4	Extreme
*	Chronic

Syngenta Hazard Category: B,S

For non-emergency questions about this product call:

1-800-334-9481

Original Issued Date: 1/30/1997

Revision Date: 12/8/2014

Replaces: 9/19/2012

Section(s) Revised: 1-16

The information and recommendations contained herein are based upon data believed to be correct. However, no guarantee or warranty of any kind, expressed or implied, is made with respect to the information contained herein.



Rethink Tomorrow
3935 Thatcher Avenue, Saskatoon, SK. S7R 1A3 Canada

Material Safety Data Sheet

1. Product identification

Product use: *Penicillium* Inoculant
MSDS number: NZBC-101
Effective date: June 1, 2014

JumpStart® wettable powder

2. Composition:

Component	CAS number	% (w/w)
Pure culture of <i>Penicillium bilaii</i> fungus	Not available	3 - 23
Other ingredients:	Not available	77 - 97

Note: This product contains beneficial microorganisms. Novozymes exclusively uses non-pathogenic beneficial microorganisms that are considered to be non-allergenic, non-irritating and non-sensitizing when used as directed. Exposure to very high levels of airborne microbial spores may result in very rare respiratory impairments or cause an allergic reaction in sensitized individuals. A Material Safety Data Sheet is supplied with all products.

Emergency overview:

Individuals allergic to molds and/or fungi should avoid using this product. If use by allergic individuals is unavoidable, absorption by eye or skin contact, inhalation or ingestion must be prevented to minimize the chance of allergic reaction.

3. Hazard identification:

NFPA: Health – 1, Flammability – 1, Reactivity – 0

Potential health effects:

Eyes: Contact may cause eye irritation.

Skin contact: Low hazard for usual handling.

Skin absorption: A single prolonged exposure is not likely to result in this material being absorbed in harmful amounts. Do not expose open cuts or wounds to this product.

Ingestion: Small amounts swallowed incidental to industrial handling are not likely to cause injury. Ingestion of larger amounts may cause stomach discomfort or pain.

Inhalation: Prolonged or repeated exposure may cause injury to the respiratory tract.

Chronic effects: Not a likely hazard

Cancer: Not a likely hazard

Birth defects: Not available

Reproductive effects: Not available

Mutagenic effects: Not available

4. First aid measures:

Eyes: Flush with a continuous gentle stream of water for 5 minutes. If irritation develops, get medical attention.

Skin: Wash with plenty of soap and water.

Ingestion: Do not induce vomiting unless instructed to do so by qualified medical personnel. If individual is conscious, give them plenty of water to drink. Get medical attention if stomach discomfort develops.

Inhalation: Move individual to fresh air. Encourage coughing. Get medical attention if breathing difficulty develops.

Note to physician: Employ supportive care. Treatment should be based on the judgment of the physician in response to reactions of the patient.

5. Fire-fighting measures:

Flash point: Not applicable

Explosive limits: Not applicable

Auto-ignition temperature: Not applicable

Extinguishing media: Use extinguishing media appropriate for controlling the surrounding fire.

Sensitivity to mechanical impact/static discharge: Not available

Unusual fire and explosion hazards: None known.

Fire-fighting equipment: Wear positive-pressure self-contained breathing apparatus and full turn-out gear.

6. Accidental release measures:

Sweep up the spill and store in a suitable container until proper disposal can be arranged.

7. Handling and storage:

Store any unused product in original unopened containers at temperatures below 20°C (68°F) away from sunlight, drafts, and direct heat sources. Practice reasonable caution to avoid contact with this product. Avoid breathing dusts and mists if generated. Users should wash hands before eating, drinking, chewing gum, using tobacco or the toilet. Keep out of reach of children. Do not ship or store this product with food, feed, drugs or clothing.

In Case of Emergency Call: 1-888-744-5662

Available 24 hours a day 7 days a week from April 1st to June 15th,
otherwise available from 8:00am to 4:30pm CST, Monday to Friday.

8. Exposure controls, personal protection and exposure limits:

Penicillium bilaii: Not available

Engineering controls: Good ventilation is required. Avoid generating aerosols during handling.

Breathing: Use an approved air-purifying respirator if respiratory irritation is experienced.

Protective clothing: Wear clean body-covering clothing and impervious gloves when handling this product.

Eyes: Use safety glasses

Other protection: None specified

9. Physical and chemical properties:

Boiling point: Not applicable

Vapour pressure: Not applicable

Volatility: Not applicable

pH: 7.1

Appearance: Light green powder

Odour: Slight

Coefficient of water/oil distribution: Not available

Evaporation rate: Not applicable

Solubility in water: Suspends in water

Freezing point: Not applicable

Odour threshold: Not available

Melting point: Not applicable

Physical state: Solid

Vapor density: Not applicable

Specific gravity: Not available

10. Stability and Reactivity:

Incompatibility: Acids, bases, oxidizers, reducers, disinfectants, fungicides, and/or biocides may inactivate.

Hazardous decomposition products: Thermal decomposition releases CO, CO₂, hydrocarbons.

Hazardous polymerization: Does not occur

11. Toxicological information:

Skin absorption: Not available

Ingestion: Oral LD₅₀ is not available

Inhalation: Inhalation LC₅₀ is not available

12. Ecological information:

Toxicity to bees: Not available. Not a likely hazard

Toxicity to fish: Not available. Not a likely hazard

Toxicity to birds: Not available. Not a likely hazard

13. Disposal considerations:

This product may be disposed of by placement in any landfill approved for domestic waste.

14. Transportation information:

This product is not regulated as a hazardous material for all modes of transportation within the U.S. and Canada.

Hazard class: Not applicable

15. Regulatory information:

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all of the information required by the Controlled Products Regulations.

Proposition 65: Contains no components subject to warning requirements.

Master reference: On file

MSDS status: New MSDS

16. Other Information:

Prepared by: M. Sonier

This information may not be adequate for every application and therefore it is up to the user to determine the suitability of this information based on conditions of use, storage or local regulations.

Notice: The information contained in this Material Safety Data Sheet is presented in good faith and is believed to be accurate as of the effective date shown above. However, no other warranty, expressed, or implied, is given. Laws, regulations, and/or third party rights may prevent customers from importing, using, processing and/or reselling the products described herein in a given manner. Without separate written agreement between the customer and Novozymes to such effect this document does not constitute a representation or warranty of any kind and is subject to change without further notice.

In Case of Emergency Call: 1-888-744-5662

Available 24 hours a day 7 days a week from April 1st to June 15th,
otherwise available from 8:00am to 4:30pm CST, Monday to Friday.

Section 1 - Identification of The Material and Supplier

BioStart Ltd
216 Lake Road, Hauraki
Auckland 0622, New Zealand

Phone: +64 9 488 0180
Fax: +64 21 593 609

Chemical nature: Water solution of minerals, fermentation extracts and other plant nutrients.

Trade Name: **Mycorrcin**

Product Use: Soil mycorrhizal fungi activator.

Creation Date: **April, 2015**

This version issued: **April, 2015** and is valid for 5 years from this date.

Poisons Information Centre: Phone 13 1126 from anywhere in Australia

Section 2 - Hazards Identification

Statement of Hazardous Nature

This product is classified as: Not classified as hazardous according to the criteria of SWA.

Not a Dangerous Good according to Australian Dangerous Goods (ADG) Code, IATA or IMDG/IMSBC criteria.

Risk Phrases: Not Hazardous - No criteria found.

Safety Phrases: S23, S25, S36. Do not breathe spray mists. Avoid contact with eyes. Wear suitable protective clothing.

SUSMP Classification: None allocated.

ADG Classification: None allocated. Not a Dangerous Good according to Australian Dangerous Goods (ADG) Code, IATA or IMDG/IMSBC criteria.

UN Number: None allocated

GHS Signal word: NONE. Not hazardous.

PREVENTION

P102: Keep out of reach of children.

P262: Do not get in eyes, on skin, or on clothing.

P281: Use personal protective equipment as required.

RESPONSE

P353: Rinse skin or shower with water.

P301+P330+P331: IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.

P370+P378: Not combustible. Use extinguishing media suited to burning materials.

STORAGE

P404: Store in a closed container.

DISPOSAL

P501: If they can not be recycled, dispose of contents to an approved waste disposal plant and containers to landfill (see Section 13 of this SDS).

Emergency Overview

Physical Description & Colour: Light brown liquid.

Odour: No data re odour.

Major Health Hazards: no significant risk factors have been found for this product.

Potential Health Effects

Inhalation:

Short Term Exposure: Available data indicates that this product is not harmful. In addition product is unlikely to cause any discomfort or irritation.

Long Term Exposure: No data for health effects associated with long term inhalation.

Skin Contact:

Short Term Exposure: Available data indicates that this product is not harmful. It should present no hazards in normal use. In addition product is unlikely to cause any discomfort in normal use.

Long Term Exposure: No data for health effects associated with long term skin exposure.

Eye Contact:

Short Term Exposure: This product is believed to be mildly irritating, to eyes, but is unlikely to cause anything more than mild transient discomfort.

SAFETY DATA SHEET

Long Term Exposure: No data for health effects associated with long term eye exposure.

Ingestion:

Short Term Exposure: Significant oral exposure is considered to be unlikely. However, this product may be mildly irritating to mucous membranes but is unlikely to cause anything more than mild transient discomfort.

Long Term Exposure: No data for health effects associated with long term ingestion.

Carcinogen Status:

SWA: No significant ingredient is classified as carcinogenic by SWA.

NTP: No significant ingredient is classified as carcinogenic by NTP.

IARC: No significant ingredient is classified as carcinogenic by IARC.

Section 3 - Composition/Information on Ingredients

Ingredients	CAS No	Conc,%	TWA (mg/m ³)	STEL (mg/m ³)
Non viable fermentation extracts	not set	500g/L	not set	not set
Mineral salts	various	200-300g/L	not set	not set
Other non hazardous ingredients	various	30-60g/L	not set	not set
Water	7732-18-5	to 100	not set	not set

This is a commercial product whose exact ratio of components may vary slightly. Minor quantities of other non hazardous ingredients are also possible.

The SWA TWA exposure value is the average airborne concentration of a particular substance when calculated over a normal 8 hour working day for a 5 day working week. The STEL (Short Term Exposure Limit) is an exposure value that may be equalled (but should not be exceeded) for no longer than 15 minutes and should not be repeated more than 4 times per day. There should be at least 60 minutes between successive exposures at the STEL. The term "peak" is used when the TWA limit, because of the rapid action of the substance, should never be exceeded, even briefly.

Section 4 - First Aid Measures

General Information:

You should call The Poisons Information Centre if you feel that you may have been poisoned, burned or irritated by this product. The number is 13 1126 from anywhere in Australia (0800 764 766 in New Zealand) and is available at all times. Have this SDS with you when you call.

Inhalation: First aid is not generally required. If in doubt, contact a Poisons Information Centre or a doctor.

Skin Contact: Irritation is unlikely. However, if irritation does occur, flush with lukewarm, gently flowing water for 5 minutes or until chemical is removed.

Eye Contact: Immediately flush the contaminated eye(s) with lukewarm, gently flowing water for 5 minutes or until the product is removed, while holding the eyelid(s) open. Obtain medical advice immediately if irritation occurs. Take special care if exposed person is wearing contact lenses.

Ingestion: If product is swallowed or gets in mouth, do NOT induce vomiting; wash mouth with water and give some water to drink. If symptoms develop, or if in doubt contact a Poisons Information Centre or a doctor.

Section 5 - Fire Fighting Measures

Fire and Explosion Hazards: The major hazard in fires is usually inhalation of heated and toxic or oxygen deficient (or both), fire gases. There is no risk of an explosion from this product under normal circumstances if it is involved in a fire.

Only small quantities of decomposition products are expected from this product at temperatures normally achieved in a fire. This will only occur after heating to dryness.

Fire decomposition products from this product are not expected to be hazardous or harmful.

Extinguishing Media: Not combustible. Use extinguishing media suited to burning materials.

Fire Fighting: If a significant quantity of this product is involved in a fire, call the fire brigade.

Flash point: Does not burn.

Upper Flammability Limit: Does not burn.

Lower Flammability Limit: Does not burn.

Autoignition temperature: Not applicable - does not burn.

Flammability Class: Does not burn.

Section 6 - Accidental Release Measures

Accidental release: Minor spills do not normally need any special cleanup measures. In the event of a major spill, prevent spillage from entering drains or water courses. As a minimum, wear overalls, goggles and gloves. Suitable materials for protective clothing include rubber, PVC. Eye/face protective equipment should comprise as a minimum,

protective goggles. If there is a significant chance that vapours or mists are likely to build up in the cleanup area, we recommend that you use a respirator. Usually, no respirator is necessary when using this product. However, if you have any doubts consult the Australian Standard mentioned below (section 8).

Stop leak if safe to do so, and contain spill. Absorb onto sand, vermiculite or other suitable absorbent material. If spill is too large or if absorbent material is not available, try to create a dike to stop material spreading or going into drains or waterways. Sweep up and shovel or collect recoverable product into labelled containers for recycling or salvage, and dispose of promptly. Recycle containers wherever possible after careful cleaning. After spills, wash area preventing runoff from entering drains. If a significant quantity of material enters drains, advise emergency services. This material may be suitable for approved landfill. Ensure legality of disposal by consulting regulations prior to disposal. Thoroughly launder protective clothing before storage or re-use. Advise laundry of nature of contamination when sending contaminated clothing to laundry.

Section 7 - Handling and Storage

Handling: Keep exposure to this product to a minimum, and minimise the quantities kept in work areas. Check Section 8 of this SDS for details of personal protective measures, and make sure that those measures are followed. The measures detailed below under "Storage" should be followed during handling in order to minimise risks to persons using the product in the workplace. Also, avoid contact or contamination of product with incompatible materials listed in Section 10.

Storage: Make sure that containers of this product are kept tightly closed. Make sure that the product does not come into contact with substances listed under "Incompatibilities" in Section 10. Some liquid preparations settle or separate on standing and may require stirring before use. Check packaging - there may be further storage instructions on the label.

Section 8 - Exposure Controls and Personal Protection

The following Australian Standards will provide general advice regarding safety clothing and equipment:

Respiratory equipment: **AS/NZS 1715**, Protective Gloves: **AS 2161**, Occupational Protective Clothing: AS/NZS 4501 set 2008, Industrial Eye Protection: **AS1336** and **AS/NZS 1337**, Occupational Protective Footwear: **AS/NZS2210**.

SWA Exposure Limits **TWA (mg/m³)** **STEL (mg/m³)**

Exposure limits have not been established by SWA for any of the significant ingredients in this product.

No special equipment is usually needed when occasionally handling small quantities. The following instructions are for bulk handling or where regular exposure in an occupational setting occurs without proper containment systems.

Ventilation: No special ventilation requirements are normally necessary for this product. However make sure that the work environment remains clean and that vapours and mists are minimised.

Eye Protection: Eye protection such as protective glasses or goggles is recommended when this product is being used.

Skin Protection: The information at hand indicates that this product is not harmful and that normally no special skin protection is necessary. However, we suggest that you routinely avoid contact with all chemical products and that you wear suitable gloves (preferably elbow-length) when skin contact is likely.

Protective Material Types: We suggest that protective clothing be made from the following materials: rubber, PVC.

Respirator: Usually, no respirator is necessary when using this product. However, if you have any doubts consult the Australian Standard mentioned above.

Safety deluge showers should, if practical, be provided near to where this product is being handled commercially.

Section 9 - Physical and Chemical Properties:

Physical Description & colour:	Light brown liquid.
Odour:	No data re odour.
Boiling Point:	Approximately 100°C at 100kPa.
Freezing/Melting Point:	Below 0°C.
Volatiles:	Water component.
Vapour Pressure:	2.37 kPa at 20°C (water vapour pressure).
Vapour Density:	As for water.
Specific Gravity:	1.06-1.08
Water Solubility:	Completely soluble in water.
pH:	3.8-4.1 (as supplied)
Volatility:	No data.
Odour Threshold:	No data.
Evaporation Rate:	As for water.
Coeff Oil/water Distribution:	No data

SAFETY DATA SHEET

Autoignition temp: Not applicable - does not burn.

Section 10 - Stability and Reactivity

Reactivity: This product is unlikely to react or decompose under normal storage conditions. However, if you have any doubts, contact the supplier for advice on shelf life properties.

Conditions to Avoid: Keep containers tightly closed.

Incompatibilities: No particular Incompatibilities.

Fire Decomposition: Only small quantities of decomposition products are expected from this product at temperatures normally achieved in a fire. This will only occur after heating to dryness. Combustion forms carbon dioxide, and if incomplete, carbon monoxide and possibly smoke. Water is also formed. May form nitrogen and its compounds, and under some circumstances, oxides of nitrogen. Occasionally hydrogen cyanide gas in reducing atmospheres. May form oxides of sulfur (sulfur dioxide is a respiratory hazard) and other sulfur compounds. Most will have a foul odour. Carbon monoxide poisoning produces headache, weakness, nausea, dizziness, confusion, dimness of vision, disturbance of judgment, and unconsciousness followed by coma and death.

Polymerisation: This product will not undergo polymerisation reactions.

Section 11 - Toxicological Information

Local Effects:

Target Organs: There is no data to hand indicating any particular target organs.

Classification of Hazardous Ingredients

Ingredient

Risk Phrases

No ingredient mentioned in the HSIS Database is present in this product at hazardous concentrations.

Section 12 - Ecological Information

This product is unlikely to adversely effect the environment. Salts, acids and bases are typically diluted and neutralised when released to the environment in small quantities. Expected to not be an environmental hazard.

Section 13 - Disposal Considerations

Disposal: Containers should be emptied as completely as practical before disposal. If possible, recycle product and containers either in-house or send to recycle company. If this is not practical, send to a commercial waste disposal site.

Section 14 - Transport Information

UN Number: This product is not classified as a Dangerous Good by ADG, IATA or IMDG/IMSBC criteria. No special transport conditions are necessary unless required by other regulations.

Section 15 - Regulatory Information

AICS: All of the significant ingredients in this formulation are compliant with NICNAS regulations.

Section 16 - Other Information

This SDS contains only safety-related information. For other data see product literature.

Acronyms:

ADG Code	Australian Code for the Transport of Dangerous Goods by Road and Rail (7 th edition)
AICS	Australian Inventory of Chemical Substances
SWA	Safe Work Australia, formerly ASCC and NOHSC
CAS number	Chemical Abstracts Service Registry Number
Hazchem Code	Emergency action code of numbers and letters that provide information to emergency services especially firefighters
IARC	International Agency for Research on Cancer
NOS	Not otherwise specified
NTP	National Toxicology Program (USA)
R-Phrase	Risk Phrase
SUSMP	Standard for the Uniform Scheduling of Medicines & Poisons
UN Number	United Nations Number

THIS SDS SUMMARISES OUR BEST KNOWLEDGE OF THE HEALTH AND SAFETY HAZARD INFORMATION OF THE PRODUCT AND HOW TO SAFELY HANDLE AND USE THE PRODUCT IN THE WORKPLACE. EACH USER MUST REVIEW THIS SDS IN THE CONTEXT OF HOW THE PRODUCT WILL BE HANDLED AND USED IN THE WORKPLACE.

IF CLARIFICATION OR FURTHER INFORMATION IS NEEDED TO ENSURE THAT AN APPROPRIATE RISK ASSESSMENT CAN BE MADE, THE USER SHOULD CONTACT THIS COMPANY SO WE CAN ATTEMPT TO OBTAIN ADDITIONAL INFORMATION FROM OUR SUPPLIERS. OUR RESPONSIBILITY FOR PRODUCTS SOLD IS SUBJECT TO OUR STANDARD TERMS AND CONDITIONS, A COPY OF WHICH IS SENT TO OUR CUSTOMERS AND IS ALSO AVAILABLE ON REQUEST.

Please read all labels carefully before using product.

This SDS is prepared in accord with the SWA document "Preparation of Safety Data Sheets for Hazardous Chemicals - Code of Practice" (December 2011)
Copyright © Kilford & Kilford Pty Ltd, April, 2015.
<http://www.kilford.com.au/> Phone (02)9251 4532

SUBDUE MAXX®

Date: 8/3/2015
Replaces: 3/3/2015

1. PRODUCT IDENTIFICATION

Product identifier on label: **SUBDUE MAXX®**
 Product No.: A9619C
 Use: Fungicide
 Manufacturer: Syngenta Crop Protection, LLC
 Post Office Box 18300
 Greensboro NC 27419
 Manufacturer Phone: 1-800-334-9481
Emergency Phone: 1-800-888-8372

2. HAZARDS IDENTIFICATION

Classifications: Not Applicable
 Signal Word (OSHA): Not Applicable
 Hazard Statements: Not Applicable

Hazard Symbols:

Precautionary Statements: Not Applicable

Other Hazard Statements: None

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	Common Name	CAS Number	Concentration
Other ingredients	Other ingredients	Trade Secret	78.0%
(R,S)-2-[(2,6-dimethylphenyl)-methoxyacetylamino]-propionic acid methyl ester	Mefenoxam	70630-17-0 & 69516-34-3	22.0%

Ingredients not precisely identified are proprietary or non-hazardous. Values are not product specifications.

4. FIRST AID MEASURES

Have the product container, label or Safety Data Sheet with you when calling Syngenta (800-888-8372), a poison control center or doctor, or going for treatment.

Ingestion: If swallowed: Call Syngenta (800-888-8372), a poison control center or doctor immediately for treatment advice. Do not give any liquid to the person. Do not induce vomiting unless told to do so after calling 800-888-

SUBDUE MAXX®

Date: 8/3/2015
Replaces: 3/3/2015

8372 or by a poison control center or doctor. Do not give anything by mouth to an unconscious person.

Eye Contact: If in eyes: Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after 5 minutes, then continue rinsing eye. Call Syngenta (800-888-8372), a poison control center or doctor for treatment advice.

Skin Contact: If on skin or clothing: Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call Syngenta (800-888-8372), a poison control center or doctor for treatment advice.

Inhalation: If inhaled: Move person to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth if possible. Call Syngenta (800-888-8372), a poison control center or doctor for further treatment advice.

Most important symptoms/effects:

Not Applicable

Indication of immediate medical attention and special treatment needed:

There is no specific antidote if this product is ingested.

Treat symptomatically.

5. FIRE FIGHTING MEASURES

Suitable (and unsuitable) extinguishing media:

Use dry chemical, foam or CO2 extinguishing media. If water is used to fight fire, dike and collect runoff.

Specific Hazards:

During a fire, irritating and possibly toxic gases may be generated by thermal decomposition or combustion.

Special protective equipment and precautions for firefighters:

Wear full protective clothing and self-contained breathing apparatus. Evacuate nonessential personnel from the area to prevent human exposure to fire, smoke, fumes or products of combustion.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment, and emergency procedures:

Follow exposure controls/personal protection outlined in Section 8.

Methods and materials for containment and cleaning up:

Control the spill at its source. Contain the spill to prevent from spreading or contaminating soil or from entering sewage and drainage systems or any body of water. Clean up spills immediately, observing precautions in Protective Equipment Section. Cover entire spill with absorbing material and place into compatible disposal container. Scrub area with hard water detergent (e.g. commercial products such as Tide, Joy, Spic and Span). Pick up wash liquid with additional absorbent and place into compatible disposal container. Once all material is cleaned up and placed in a disposal container, seal container and arrange for disposition.

7. HANDLING AND STORAGE

Precautions for safe handling:

Store the material in a well-ventilated, secure area out of reach of children and domestic animals. Do not store food, beverages or tobacco products in the storage area. Prevent eating, drinking, tobacco use, and cosmetic application in areas where there is a potential for exposure to the material. Wash thoroughly with soap and water after handling.

Conditions for safe storage, including any incompatibilities:

Not Applicable

SUBDUE MAXX®

Date: 8/3/2015
 Replaces: 3/3/2015

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

THE FOLLOWING RECOMMENDATIONS FOR EXPOSURE CONTROLS/PERSONAL PROTECTION ARE INTENDED FOR THE MANUFACTURE, FORMULATION AND PACKAGING OF THIS PRODUCT.

FOR COMMERCIAL APPLICATIONS AND/OR ON-FARM APPLICATIONS CONSULT THE PRODUCT LABEL.

Occupational Exposure Limits:

Chemical Name	OSHA PEL	ACGIH TLV	Other	Source
Other ingredients	Not Applicable	Not Applicable	Not Applicable	Not Applicable
Mefenoxam	Not Established	Not Established	5 mg/m ³ TWA	Syngenta

Appropriate engineering controls:

Use effective engineering controls to comply with occupational exposure limits (if applicable).

Individual protection measures:

Ingestion:

Prevent eating, drinking, tobacco usage and cosmetic application in areas where there is a potential for exposure to the material. Wash thoroughly with soap and water after handling.

Eye Contact:

Where eye contact is likely, use chemical splash goggles.

Skin Contact:

Where contact is likely, wear chemical-resistant (such as nitrile or butyl) gloves, coveralls, socks and chemical-resistant footwear.

Inhalation:

A respirator is not normally required when handling this substance. Use effective engineering controls to comply with occupational exposure limits.

In case of emergency spills, use a NIOSH approved respirator with any N, R, P or HE filter.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance: Amber liquid

Odor: Sweet and waxy

Odor Threshold: Not Available

pH: 7 - 9 (1% solution in H₂O @ 77°F (25°C))

Melting point/freezing point: Not Applicable

Initial boiling point and boiling range: Not Available

Flash Point (Test Method): > 200°F

Flammable Limits (% in Air): Not Available

Flammability: Not Applicable

Vapor Pressure: Mefenoxam 2.5 x 10⁻⁵ mmHg @ 77°F (25°C)

Vapor Density: Not Available

Relative Density: 1.102 g/ml ; 9.196 lb/gal @ 68°F

Solubility (ies): Mefenoxam 26 g/l @ 77°F (25°C)

Partition coefficient: n-octanol/water: Not Available

SUBDUE MAXX®

Date: 8/3/2015
Replaces: 3/3/2015

Autoignition Temperature: Not Available
Decomposition Temperature: Not Available
Viscosity: Not Available
Other: None

10. STABILITY AND REACTIVITY

Reactivity: Not reactive.
Chemical stability: Stable under normal use and storage conditions.
Possibility of hazardous reactions: Will not occur.
Conditions to Avoid: None known.
Incompatible materials: None known.
Hazardous Decomposition Products: None known.

11. TOXICOLOGICAL INFORMATION

Health effects information

Likely routes of exposure: Dermal, Inhalation

Symptoms of exposure: Not Applicable

Delayed, immediate and chronic effects of exposure: Not Applicable

Numerical measures of toxicity (acute toxicity/irritation studies (finished product))

Ingestion:	Oral (LD50 Female Rat) :	2965 mg/kg body weight
Dermal:	Dermal (LD50 Rat) :	> 5050 mg/kg body weight
Inhalation:	Inhalation (LC50 Rat) :	> 2.8 mg/l air - 4 hours
Eye Contact:	Moderately Irritating (Rabbit)	
Skin Contact:	Practically Non-Irritating (Rabbit)	
Skin Sensitization:	Not a Sensitizer (Guinea Pig)	

Reproductive/Developmental Effects

Mefenoxam: None observed.

Chronic/Subchronic Toxicity Studies

Mefenoxam: Liver effects at high dose animal tests.

Carcinogenicity

Mefenoxam: None observed.

SUBDUE MAXX®

Date: 8/3/2015
 Replaces: 3/3/2015

Chemical Name NTP/IARC/OSHA Carcinogen

Other ingredients No

(R,S)-2-[(2,6-dimethylphenyl)-methoxyacetylamino]-propionic acid methyl ester No

Other Toxicity Information

None

Toxicity of Other Components

Other ingredients
 Not Applicable

Target Organs

Active Ingredients

Mefenoxam: Liver

Inert Ingredients

Other ingredients: Not Applicable

12. ECOLOGICAL INFORMATION

Eco-Acute Toxicity

Mefenoxam:

- Fish (Rainbow Trout) 96-hour LC50 > 121 ppm
- Invertebrate (Water Flea) Daphnia Magna 48-hour EC50 > 113 ppm
- Bird (Bobwhite Quail) 14-day LD50 981 mg/kg

Environmental Fate

Mefenoxam:

The information presented here is for the active ingredient, mefenoxam.
 Does not bioaccumulate. Not persistent in soil or water. Moderate mobility in soil. Mixes/sinks (after 24 h).

13. DISPOSAL CONSIDERATIONS

Disposal:

Do not reuse product containers. Dispose of product containers, waste containers, and residues according to local, state, and federal health and environmental regulations.

Characteristic Waste: Not Applicable

Listed Waste: Not Applicable

14. TRANSPORT INFORMATION

DOT Classification

Ground Transport - NAFTA
 Not regulated

Comments

Water Transport - International
 Not regulated

SUBDUE MAXX®

Date: 8/3/2015
 Replaces: 3/3/2015

Air Transport
 Not regulated

15. REGULATORY INFORMATION

Pesticide Registration:

This chemical is a pesticide product registered by the Environmental Protection Agency and is subject to certain labeling requirements under federal pesticide law. These requirements differ from the classification criteria and hazard information required for safety data sheets, and for workplace labels of non-pesticide chemicals. Following is the hazard information as required on the pesticide label:

Caution: Causes moderate eye irritation. Harmful if swallowed or absorbed through skin. Avoid contact with eyes, skin, or clothing. Wash thoroughly with soap and water after handling.

EPA Registration Number(s):
 100-796

EPCRA SARA Title III Classification:

Section 311/312 Hazard Classes: Acute Health Hazard
 Section 313 Toxic Chemicals: None

California Proposition 65:

This product does not contain chemical(s) known to the State of California to cause cancer and birth defects or other reproductive harm.

CERCLA/SARA 304 Reportable Quantity (RQ):
 None

RCRA Hazardous Waste Classification (40 CFR 261):
 Not Applicable

TSCA Status:
 Exempt from TSCA, subject to FIFRA

16. OTHER INFORMATION

NFPA Hazard Ratings

Health: 2
 Flammability: 1
 Instability: 0

HMIS Hazard Ratings

Health: 1
 Flammability: 1
 Reactivity: 0

0	Minimal
1	Slight
2	Moderate
3	Serious
4	Extreme
*	Chronic

Syngenta Hazard Category: A

For non-emergency questions about this product call:

1-800-334-9481

Original Issued Date: 4/9/1996
 Revision Date: 8/3/2015 Replaces: 3/3/2015
 Section(s) Revised: 2, 4, 11, 16

SUBDUE MAXX®

Date: 8/3/2015

Replaces: 3/3/2015

The information and recommendations contained herein are based upon data believed to be correct. However, no guarantee or warranty of any kind, expressed or implied, is made with respect to the information contained herein.

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Name: Compare-N-Save® 2,4-D Amine Salt Broadleaf Weed Control
EPA Reg. No.: 228-145-84009
Product Type: Herbicide

Company Name: Ragan and Massey, Inc.
101 Ponchatoula Parkway
Ponchatoula, LA 70454
1-800-264-5281

Telephone Numbers: For Chemical Emergency, Spill, Leak, Fire, Exposure, or Accident,
Call CHEMTREC Day or Night: 1-800-424-9300
For Medical Emergencies Only, Call 1-877-325-1840

This product is an EPA FIFRA registered pesticide. Some classifications on this SDS are not the same as the FIFRA label. Certain sections of this SDS are superseded by federal law governed by EPA for a registered pesticide. Please see Section 15. REGULATORY INFORMATION for explanation.

2. HAZARDS IDENTIFICATION**HEALTH HAZARDS:**

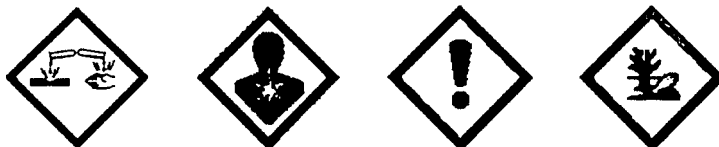
Serious eye damage	Category 1
Acute toxicity, oral	Category 4
Specific target organ toxicity - Repeated exposure	Category 2

SIGNAL WORD:

DANGER

HAZARD STATEMENTS

Causes serious eye damage. Harmful if swallowed. May cause damage to organs (liver, kidneys) through prolonged or repeated exposure. Toxic to aquatic life with long lasting effects.

**PRECAUTIONARY STATEMENTS**

Causes serious eye damage. Wear face shield, goggles or safety glasses with side protection. If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a poison control center or doctor for treatment advice.

Harmful if swallowed. Wash hands thoroughly after handling. Do not eat, drink or smoke when using this product. If swallowed, call a poison control center or doctor if you feel unwell. Rinse mouth. Dispose of contents and container in accordance with local and state regulations.

Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Wear protective equipment specified in **Section 8**. If exposed or concerned: Get medical advice/attention. Store locked up.

Toxic to aquatic life with long lasting effects. Avoid release to the environment. Collect spillage.

3. COMPOSITION / INFORMATION ON INGREDIENTS

COMPONENT	CAS NO.	% BY WEIGHT
Dimethylamine Salt of 2,4-Dichlorophenoxyacetic Acid	2008-39-1	45.4 – 48.2
Other Ingredients	Trade Secret	Trade Secret

Synonyms: 2,4-D DMA; 2,4-Dichlorophenoxyacetic acid, dimethylamine salt

Ingredients not precisely identified are proprietary or non-hazardous. Values are not product's specifications.

4. FIRST AID MEASURES

If in Eyes: Hold eye open and rinse slowly and gently with water for 15 to 20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Call a poison control center or doctor for treatment advice.

If Swallowed: Call a poison control center or doctor immediately for treatment advice. Have person sip a glass of water if able to swallow. Do not induce vomiting unless told to do so by the poison control center or doctor. Do not give anything by mouth to an unconscious person.

If on Skin or Clothing: Take off contaminated clothing. Rinse skin immediately with plenty of water for 15 to 20 minutes. Call a poison control center or doctor for treatment advice.

If Inhaled: Move person to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably by mouth-to-mouth, if possible. Call a poison control center or doctor for further treatment advice.

Most Important Symptoms/Effects: Eye irritation.

Indication of immediate medical attention and special treatment if needed: There is no specific antidote if this product is ingested. Treat symptomatically.

5. FIRE FIGHTING MEASURES

Extinguishing Media: Recommended for large fires: foam or water spray. Recommended for small fires: dry chemical or carbon dioxide.

Special Fire Fighting Procedures: Firefighters should wear NIOSH/MSHA approved self-contained breathing apparatus and full fire-fighting turn out gear. Dike area to prevent runoff and contamination of water sources. Dispose of fire control water later.

Unusual Fire and Explosion Hazards: Containers will burst from internal pressure under extreme fire conditions. If water is used to fight fire or cool containers, dike to prevent runoff contamination of municipal sewers and waterways.

Hazardous Decomposition Materials (Under Fire Conditions): May produce gases such as hydrogen chloride and oxides of carbon and nitrogen.

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions: Wear appropriate protective gear for the situation. See Personal Protection information in Section 8.

Environmental Precautions: Prevent material from entering public sewer systems or any waterways. Do not flush to drain. Large spills to soil or similar surfaces may necessitate removal of topsoil. The affected area should be removed and placed in an appropriate container for disposal.

Methods for Containment: Dike spill using absorbent or impervious materials such as earth, sand or clay. Collect and contaminated absorbent and dike material for disposal.

Methods for Cleanup and Disposal: Pump any free liquid into an appropriate closed container. Collect washings for disposal. Decontaminate tools and equipment following cleanup. See Section 13: DISPOSAL CONSIDERATIONS for more information.

SAFETY DATA SHEET

Compare-N-Save® 2,4-D Amine Salt Broadleaf Weed Control

Other Information: Large spills may be reportable to the National Response Center (800-424-8802) and to state and/or local agencies.

7. HANDLING AND STORAGE

HANDLING:

Avoid breathing vapors or spray mist. Do not get in eyes, on skin or on clothing. Users should wash hands before eating, drinking, chewing gum, using tobacco, or using the toilet. Remove clothing/Personal Protective Equipment (PPE) immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing. If pesticide gets on skin, wash immediately with soap and water. Remove PPE immediately after handling this product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.

STORAGE:

Store in original container in a dry, secured storage area. Keep container tightly closed when not in use. Store at temperatures above 32° F. If allowed to freeze, warm to at least 40° F and remix before using. Freezing does not alter the product. Do not contaminate water, food or feed by storage or disposal.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Engineering Controls:

Where engineering controls are indicated by specific use conditions or a potential for excessive exposure, use local exhaust ventilation at the point of generation.

Personal Protective Equipment:

Eye/Face Protection: To avoid contact with eyes, wear chemical goggles or face shield. An emergency eyewash or water supply should be readily accessible to the work area.

Skin Protection: To avoid contact with skin, wear long pants, long-sleeves shirt, shoes and socks, and chemical-resistant gloves. For use according to product label, chemical-resistant gloves are not required for applicators using ground boom equipment. Wear a chemical-resistant apron when mixing or loading, cleaning up spills or equipment, or otherwise exposed to the concentrate. An emergency shower or water supply should be readily accessible to the work area.

Respiratory Protection: Not normally required. If vapors or mists exceed acceptable levels, wear NIOSH approved air-purifying respirator with cartridges/canisters approved for use against pesticides.

General Hygiene Considerations: Personal hygiene is an important work practice exposure control measure and the following general measures should be taken when working with or handling this material: 1) do not store, use and/or consume foods, beverages, tobacco products, or cosmetics in areas where this material is stored; 2) wash hands and face carefully before eating, drinking, using tobacco, applying cosmetics or using the toilet.

Exposure Guidelines:

Component	OSHA		ACGIH		Unit
	TWA	STEL	TWA	STEL	
DMA Salt of 2,4-D	10*	NE	10*	NE	mg/m ³
Other Ingredients	N/A	N/A	N/A	N/A	

*Based on adopted limit for 2,4-D

NE = Not Established
N/A = Not Applicable

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Clear, colorless to dark yellow liquid
Odor:	Mild phenolic amine
Odor threshold:	No data available
pH:	6.9-9
Melting point/freezing point:	No data available
Initial boiling point and boiling range:	No data available
Flash point:	Not applicable due to aqueous formulation
Evaporation rate:	Not applicable
Flammability (solid, gas):	No data available

SAFETY DATA SHEET

Compare-N-Save® 2,4-D Amine Salt Broadleaf Weed Control

Upper/lower flammability or explosive limits:	No data available
Vapor Pressure:	Not applicable
Vapor Density:	Not applicable
Relative density:	1.155 @ 20° C (9.64 lbs/gal) at 21° C
Solubility(ies):	Soluble in water
Partition coefficient: n-octanol/water:	No data available
Autoignition temperature:	No data available
Decomposition temperature:	No data available
Viscosity:	10.5 cPs @ 21° c
VOC Emission Potential (%):	17.7

Note: Physical data are typical values, but may vary from sample to sample. A typical value should not be construed as a guaranteed analysis or as a specification.

10. STABILITY AND REACTIVITY

Reactivity: Not reactive

Chemical Stability: This material is stable under normal handling and storage conditions.

Possibility of Hazardous Reactions: Will not occur.

Conditions to Avoid: Excessive heat. Do not store near heat or flame.

Incompatible Materials: Strong oxidizing agents: bases and acids.

Hazardous Decomposition Products: Under fire conditions may produce gases such as hydrogen chloride and oxides of carbon and nitrogen.

11. TOXICOLOGICAL INFORMATION

Likely Routes of Exposure: Eye contact.

Symptoms of Exposure: Eye irritation.

Delayed, immediate and chronic effects of exposure: Eye irritation.

Toxicological Data:

Except as noted, data from laboratory studies conducted on this product are summarized below.

Oral: Rat LD₅₀: 1,030 mg/kg (female) (estimated based on mortalities for doses tested)

Dermal: Rabbit LD₅₀: >5,000 mg/kg (data on similar product)

Inhalation: Rat 4-hr LC₅₀: >2.06 mg/L (no animals died at this dose)

Eye Irritation: Rabbit: Corrosive/severely irritating (data on similar product)

Skin Irritation: Rabbit: Slightly irritating (data on similar product)

Skin Sensitization: Guinea Pig: Not a contact sensitizer

Subchronic (Target Organ) Effects: Repeated overexposure to phenoxy herbicides may cause effects to liver, kidneys, blood chemistry, and gross motor function. Rare cases of peripheral nerve damage have been reported, but extensive animal studies have failed to substantiate these observations, even at high doses for prolonged periods.

Carcinogenicity / Chronic Health Effects: Various animal cancer tests have shown no reliably positive association between 2,4-D exposure and cancer. Epidemiology studies on herbicide use have been both positive and negative with the majority being negative.

Reproductive Toxicity: No impairment of reproductive function attributable to 2,4-D has been noted in laboratory animals studies.

Developmental Toxicity: Studies in laboratory animals with 2,4-D have shown decreased fetal body weights and delayed development in the offspring at doses toxic to mother animals.

Genotoxicity: There have been some positive and some negative studies, but the weight of evidence is that 2,4-D is not mutagenic.

SAFETY DATA SHEET

**Compare-N-Save® 2,4-D Amine Salt
Broadleaf Weed Control**

Assessment Carcinogenicity: This product contains substances that are considered to be probable or suspected human carcinogens as follows:

Component	Regulatory Agency Listing As Carcinogen			
	ACGIH	IARC	NTP	OSHA
Chlorophenoxy Herbicides	No	2B	No	No
Other Ingredients	No	No	No	No

12. ECOLOGICAL INFORMATION

Environmental Hazards:

This product is toxic to fish and aquatic invertebrates. Drift and runoff may be hazardous to aquatic organisms in waste adjacent to treated areas.

Excotoxicity:

Data on 2,4-Dimethylamine Salt:

96-hour LC ₅₀ Bluegill:	524 mg/l	Bobwhite Quail Oral LD ₅₀ :	500 mg/kg
96-hour LC ₅₀ Rainbow Trout:	250 mg/l	Mallard Duck 8-day Dietary LC ₅₀ :	>5,620 ppm
48-hour EC ₅₀ Daphnia:	184 mg/l		

Environmental Fate:

In laboratory and field studies, 2,4-D DMA salt rapidly dissociated to parent acid in the environment. The typical half-life of the resultant 2,4-D acid ranged from a few days to a few weeks.

13. DISPOSAL CONSIDERATIONS

Waste Disposal Method:

Pesticide wastes are acutely hazardous. Improper disposal of excess pesticide, spray mixture, or rinsate is a violation of Federal law and may contaminate ground water. If these wastes cannot be disposed of by use according to label instructions, contact your State Pesticide or Environmental Control Agency, or the Hazardous Waste representative at the nearest EPA Regional Office for guidance.

Container Handling and Disposal:

Nonrefillable Containers 5 Gallons or Less: Nonrefillable container. Do not reuse or refill this container. Triple rinse container (or equivalent) promptly after emptying. **Triple rinse as follows:** Empty the remaining contents into application equipment or a mix tank and drain for 10 seconds after the flow begins to drip. Fill the container ¼ full with water and recap. Shake for 10 seconds. Pour rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Drain for 10 seconds after the flow begins to drip. Repeat this procedure two more times. Then offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill, or by other procedures approved by State and local authorities. Plastic containers are also disposable by incineration, or, if allowed by State and local authorities, by burning. If burned, stay out of smoke.

Nonrefillable Containers Larger Than 5 Gallons: Nonrefillable container. Do not reuse or refill this container. Offer for recycling if available. Triple rinse or pressure rinse container (or equivalent) promptly after emptying. **Triple rinse as follows:** Empty the remaining contents into application equipment or a mix tank. Fill the container ¼ full with water. Replace and tighten closures. Tip container on its side and roll it back and forth, ensuring at least one complete revolution, for 30 seconds. Stand the container on its end and tip it back and forth several times. Turn the container over onto its other end and tip it back and forth several times. Empty the rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Repeat this procedure two more times. **Pressure rinse as follows:** Empty the remaining contents into application equipment or a mix tank and continue to drain for 10 seconds after the flow begins to drip. Hold container upside down over application equipment or mix tank or collect rinsate for later use or disposal. Insert pressure rinsing nozzle in the side of the container, and rinse at about 40 psi for at least 30 seconds. Drain for 10 seconds after the flow begins to drip.

Refillable containers larger than 5 gallons: Refillable container. Refill this container with pesticide only. Do not reuse this container for any other purpose. Cleaning the container before final disposal is the responsibility of the person disposing of the container. Cleaning before refilling is the responsibility of the refiller. To clean the container before final disposal, empty the remaining contents from this container into application equipment or a mix tank. Fill the container about 10% full of water and, if possible, spray all sides while adding water. Agitate vigorously or recirculate water with the pump for two minutes. Pour or pump rinsate into application equipment or rinsate collection system. Repeat this rinsing procedure two more times.

14. TRANSPORTATION INFORMATION

Follow the precautions indicated in Section 7: HANDLING AND STORAGE OF THIS SDS.

DOT:

<25 gallons per completed package
Non Regulated

≥25 gallons per completed package
UN 3082, Environmentally hazardous substance, liquid, n.o.s. (2,4-D Salt), 9, III RQ

IMDG:

Non Regulated

IATA:

Non Regulated

15. REGULATORY INFORMATION

EPA FIFRA INFORMATION

This chemical is a pesticide product registered by the United States Environmental Protection Agency and is subject to certain labeling requirements under federal pesticide law. These requirements differ from the classification criteria and hazard information required for safety data sheets (SDS), and for workplace labels of non-pesticide chemicals. The hazard information required on the pesticide label is reproduced below. The pesticide label also includes other important information, including directions for use.

DANGER. Corrosive. Causes irreversible eye damage. Harmful if swallowed. Avoid breathing vapors or spray mist. Do not get in eyes, on skin, or on clothing.

U.S. FEDERAL REGULATIONS

TSCA Inventory: This product is exempted from TSCA because it is solely for FIFRA regulated use.

SARA Hazard Notification/Reporting:

Hazard Categories Under Criteria of SARA Title III Rules (40 CFR Part 370.66):

Immediate and Delayed

Section 313 Toxic Chemical(s):

None Listed

Reportable Quantity (RQ) under U.S. CERCLA:

None

RCRA Waste Code:

Under RICRA, it is the responsibility of the product user to determine at the time of disposal, whether a material containing the product or derived from the product should be classified as a hazardous waste.

State Information:

Other state regulations may apply. Check individual state requirements.

California Proposition 65:
Not listed.

16. OTHER INFORMATION**National Fire Protection Association (NFPA) Hazard Rating:**

Rating for this product: Health: 3 Flammability: 1 Reactivity: 0

Hazards Scale: 0 = Minimal 1 = Slight 3 = Serious 4 = Severe

This Safety Data Sheet (SDS) serves different purposes than and DOES NOT REPLACE OR MODIFY THE EPA-ACCEPTED PRODUCT LABELING (attached to and accompanying the product container). This SDS provides important health, safety and environmental information for employers, employees, emergency responders and others handling large quantities of the product in activities generally other than product use, while the labeling provides that information specifically for product use in the ordinary course.

Use, storage and disposal of pesticide products are regulated by the EPA under the authority of the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) through the product labeling, and all necessary and appropriate precautionary, use, storage, and disposal information is set forth on that labeling. It is a violation of Federal law to use a pesticide product in any manner not prescribed on the EPA-accepted label.

Although the information and recommendations set forth herein (hereinafter "Information") are presented in good faith and believed to be correct as of the date hereof, Ragan and Massey, Inc. makes no representations as to the completeness or accuracy thereof. Information is supplied upon the condition that the persons receiving same will make their own determination as to its suitability for their purposes prior to use. In no event will Ragan and Massey, Inc. be responsible for damages of any nature whatsoever resulting from the use of or reliance upon information. NO REPRESENTATIONS OR WARRANTIES, EITHER EXPRESS OR IMPLIED, OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR OF ANY OTHER NATURE ARE MADE HEREUNDER WITH RESPECT TO INFORMATION OR THE PRODUCT TO WHICH INFORMATION REFER AND ALL SUCH WARRANTIES ARE HEREBY SPECIFICALLY DISCLAIMED.

Date of Issue: May 1, 2015 (NUF-020615)

Compare-N-Save is a registered trademark of Ragan and Massey, Inc.





1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Name: Cool Power® Selective Herbicide
EPA Reg. No.: 228-317
Product Type: Herbicide
Company Name: Nufarm Americas Inc.
 11901 S. Austin Avenue
 Alsip, IL 60803
 1-800-345-3330

Telephone Numbers: For Chemical Emergency, Spill, Leak, Fire, Exposure, or Accident,
 Call CHEMTREC Day or Night: 1-800-424-9300
 For Medical Emergencies Only, Call 1-877-325-1840

This product is an EPA FIFRA registered pesticide. Some classifications on this SDS are not the same as the FIFRA label. Certain sections of this SDS are superseded by federal law governed by EPA for a registered pesticide. Please see Section 15. REGULATORY INFORMATION for explanation.

2. HAZARDS IDENTIFICATION

PHYSICAL HAZARDS

Not hazardous

HEALTH HAZARDS:

Acute Toxicity Oral	Category 4
Aspiration Hazard	Category 1
Eye Irritation	Category 2B

ENVIRONMENTAL HAZARDS:

Hazardous to aquatic environment, acute	Category 1
Hazardous to aquatic environment, chronic	Category 1

SIGNAL WORD:

DANGER

HAZARD STATEMENTS:

Harmful if swallowed. May be fatal if swallowed and enters airways. Causes eye irritation. Very toxic to aquatic life with long lasting effects.



PRECAUTIONARY STATEMENTS

Wash thoroughly after handling. Do not eat, drink, or smoke when using this product. Avoid release to the environment.

IF SWALLOWED: Immediately call a POISON CENTER or doctor. Do NOT induce vomiting.

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice.

Collect spillage.

Dispose of contents in accordance with local, state, and federal regulations.

3. COMPOSITION / INFORMATION ON INGREDIENTS

COMPONENT	CAS NO.	% BY WEIGHT
2-methyl-4-chlorophenoxyacetic acid, isooctyl (2-ethylhexyl) ester	29450-45-1	54.4 – 57.8
Butoxyethanol Ester 3,5,6-Trichloro-2-Pyridinyloxyacetic Acid	64700-56-7	5.0 – 5.5
Dicamba Acid	1918-00-9	3.85 – 4.25
Distillates (Petroleum), Hydrotreated Light	64742-48-8	25.7 – 27.4
Other Ingredients	Trade Secret	Trade Secret

Synonyms: Mixture of MCPA, Triclopyr and Dicamba

Ingredients not precisely identified are proprietary or non-hazardous. Values are not product specifications.

4. FIRST AID MEASURES

If in Eyes: Hold eye open and rinse slowly and gently with water. Remove contact lenses, if present, then continue rinsing eye. Get medical attention if irritation occurs and persists.

If Swallowed: DO NOT induce vomiting. Get immediate medical attention.

If Inhaled: Move person to fresh air. If breathing is difficult, administer oxygen. If symptoms develop, get medical advice.

If on Skin or Clothing: Take off contaminated clothing. Rinse skin immediately with plenty of water. If irritation occurs, get medical advice.

Most important symptoms/effects, acute and delayed: Causes eye irritation. Harmful if swallowed. Aspiration hazard – may be fatal if swallowed and enter airways.

Indication of immediate medical attention and special treatment needed, if necessary: Get immediate medical attention for ingestion.

5. FIRE FIGHTING MEASURES

Extinguishing Media: Recommended for large fires: foam or water spray. Recommended for small fires: dry chemical or carbon dioxide.

Special Fire Fighting Procedures: Firefighters should wear NIOSH approved self-contained breathing apparatus and full fire-fighting turn out gear. Dike area to prevent runoff and contamination of water sources. Dispose of fire control water later.

Unusual Fire and Explosion Hazards: If water is used to fight fire or cool containers, dike to prevent runoff contamination of municipal sewers and waterways.

Hazardous Decomposition Materials (Under Fire Conditions): May produce gases such as hydrogen chloride and oxides of nitrogen and carbon.

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions: Wear appropriate protective gear for the situation. See Personal Protection information in Section 8.

Environmental Precautions: Prevent material from entering public sewer systems or any waterways. Do not flush to drain. Large spills to soil or similar surfaces may necessitate removal of topsoil. The affected area should be removed and placed in an appropriate container for disposal.

Methods for Containment: Dike spill using absorbent or impervious materials such as earth, sand or clay. Collect and contain contaminated absorbent and dike material for disposal.

Methods for Cleanup and Disposal: Pump any free liquid into an appropriate closed container. Collect washings for disposal. Decontaminate tools and equipment following cleanup. See Section 13: DISPOSAL CONSIDERATIONS for more information.

Other Information: Large spills may be reportable to the National Response Center (800-424-8802) and to state and/or local agencies.

7. HANDLING AND STORAGE

HANDLING:

Avoid contact with skin, eyes or clothing. Users should wash hands before eating, drinking, chewing gum, using tobacco or using the toilet. Remove clothing/Personal Protective Equipment (PPE) immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing. If pesticide gets on skin, wash immediately with soap and water. Remove PPE immediately after handling this product. As soon as possible, wash thoroughly and change into clean clothing.

SAFETY DATA SHEET

Cool Power® Selective Herbicide

STORAGE:

Always store pesticides in a secured warehouse or storage building. Containers should be opened in well-ventilated area. Keep container tightly sealed when not in use. Do not stack cardboard cases more than two pallets high. Do not store near open containers of fertilizer, seed or other pesticides. Do not contaminate water, food or feed by storage or disposal.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Engineering Controls:

Where engineering controls are indicated by specific use conditions or a potential for excessive exposure, use local exhaust ventilation at the point of generation.

Personal Protective Equipment:

Eye/Face Protection: To avoid contact with eyes, wear chemical goggles or shielded safety glasses. An emergency eyewash or water supply should be readily accessible to the work area.

Skin Protection: To avoid contact with skin, wear long pants, long-sleeved shirt, socks, shoes and chemical-resistant gloves made of barrier laminate, nitrile rubber, neoprene rubber, or viton. An emergency shower or water supply should be readily accessible to the work area.

Respiratory Protection: Not normally required. If vapors or mists exceed acceptable levels, wear NIOSH approved air-purifying respirator with cartridges/canisters approved for use against pesticides.

General Hygiene Considerations: Personal hygiene is an important work practice exposure control measure and the following general measures should be taken when working with or handling this material: 1) do not store, use and/or consume foods, beverages, tobacco products, or cosmetics in areas where this material is stored; 2) wash hands and face carefully before eating, drinking, using tobacco, applying cosmetics or using the toilet.

Exposure Guidelines:

Component	OSHA		ACGIH		Unit
	TWA	STEL	TWA	STEL	
MCPA 2-EHE	NE	NE	NE	NE	
Triclopyr BEE	NE	NE	NE	NE	
Dicamba	NE	NE	NE	NE	
Distillates (Petroleum), Hydrotreated Light	NE	NE	NE	NE	
Other Ingredients	NE	NE	NE	NE	

NE = Not Established

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Light Amber liquid
Odor:	Aromatic hydrocarbon odor
Odor threshold:	No data available
pH:	2.73 (1% w/w dispersion in DIW)
Melting point/freezing point:	No data available
Initial boiling point and boiling range	No data available
Flash point:	>230° F (110° C) Tag Closed Cup
Evaporation rate:	No data available
Flammability (solid, gas):	No data available
Upper/lower flammability or explosive limits:	No data available
Vapor pressure:	No data available
Vapor density:	No data available
Relative density:	1.016 g/cc @ 25° C
Solubility(ies):	Emulsifiable
Partition coefficient: n-octanol/water:	No data available
Autoignition temperature:	No data available
Decomposition temperature:	No data available
Viscosity:	17.59 cPs @ 25° C, 9.52 cPs @ 39° C
VOC Emission Potential (%) :	5.32

Note: Physical data are typical values, but may vary from sample to sample. A typical value should not be construed as a guaranteed analysis or as a specification.

10. STABILITY AND REACTIVITY

Reactivity: Not reactive.

Chemical Stability: This material is stable under normal handling and storage conditions.

Possibility of Hazardous Reactions: Will not occur.

Conditions to Avoid: Excessive heat. Do not store near heat or flame.

Incompatible Materials: Strong oxidizing agents: bases and acids.

Hazardous Decomposition Products: Under fire conditions may produce gases such as hydrogen chloride and oxides of nitrogen and carbon.

11. TOXICOLOGICAL INFORMATION

Likely Routes of Exposure: Inhalation, eye and skin contact.

Symptoms of Exposure:

Eye Contact: Causes eye irritation. Vapors and mists can cause irritation.

Skin Contact: Mildly irritating based on toxicity studies.

Ingestion: Harmful if ingested. May cause nausea, vomiting, abdominal pain, weakness of arms and/or legs, dizziness, loss of coordination. The petroleum hydrocarbon component, if aspirated into the respiratory system during ingestion or vomiting may cause mild or severe pulmonary injury, possibly progressing to death.

Inhalation: May cause upper respiratory tract irritation, coughing, wheezing, nausea, headache, depression. Overexposure to petroleum hydrocarbon component may cause irritation to respiratory tract, headaches, anesthesia, drowsiness, unconsciousness and other central nervous system effects, possibly including death.

Delayed, immediate and chronic effects of exposure: None reported.

Toxicological Data:

Data from laboratory studies on this product are summarized below:

Oral: Rat LD₅₀: 1,116 mg/kg

Dermal: Rabbit LD₅₀: 3,752 mg/kg

Inhalation: Rat 4-hr LC₅₀: >3.59 mg/l

Eye Irritation: Rabbit: Moderately irritating

Skin Irritation: Rabbit: Mildly irritating

Skin Sensitization: Not a contact sensitizer in guinea pigs following repeated skin exposure.

Subchronic (Target Organ) Effects: Repeated overexposure to phenoxy herbicides may cause effects to liver, kidneys, blood chemistry, and gross motor function. Rare cases of peripheral nerve damage have been reported, but extensive animal studies have failed to substantiate these observations, even at high doses for prolonged periods. Excessive exposure to Triclopyr may cause liver or kidney effects. Repeated overexposure to dicamba may cause liver changes or a decrease in body weight.

Carcinogenicity / Chronic Health Effects: The International Agency for Research on Cancer (IARC) lists exposure to chlorophenoxy herbicides as a class 2B carcinogen, the category for limited evidence for carcinogenicity in humans. However, newer rat and mouse lifetime feeding studies did not show carcinogenic potential for MCPA. Triclopyr did not cause cancer in laboratory studies. Dicamba did not cause cancer in long-term animals studies. The U.S. EPA has given triclopyr and dicamba a Class D classification (not classifiable as to human carcinogenicity).

Reproductive Toxicity: MCPA studies in laboratory animals have shown testicular effects and lower male fertility. For triclopyr, in laboratory animal studies, effects on reproduction have been seen only at doses that produced significant toxicity to the parent animals. Dicamba did not interfere with fertility in reproduction studies in laboratory animals.

Developmental Toxicity: MCPA studies in laboratory animals have shown decreased fetal body weights and delayed development in the offspring at doses toxic to mother animals. For triclopyr, birth defects are unlikely. Even exposures having an adverse effect on the mother should have no effect on the fetus. Animal tests with dicamba have not demonstrated developmental effects.

Genotoxicity: There have been some positive and some negative studies, but the weight of evidence is that MCPA is not mutagenic. Animal tests with triclopyr did not demonstrate mutagenic effects. Animal tests with dicamba did not demonstrate mutagenic effects.

Assessment Carcinogenicity:

This product contains substances that are considered to be probable or suspected human carcinogens as follows:

SAFETY DATA SHEET

Cool Power® Selective Herbicide

Component	Regulatory Agency Listing As Carcinogen			
	ACGIH	IARC	NTP	OSHA
Chlorophenoxy Herbicides (MCPA)	No	2B	No	No
Triclopyr BEE	No	No	No	No
Dicamba Acid	No	No	No	No

12. ECOLOGICAL INFORMATION

Ecotoxicity:**Data on MCPA 2-EHE:**

96-hour LC ₅₀ Bluegill:	3.9 mg/l	Bobwhite Quail Dietary LC ₅₀ :	>5,620 ppm
96-hour LC ₅₀ Rainbow Trout:	3.2 mg/l	Mallard Duck 8-day Dietary LC ₅₀ :	>5,620 ppm
48-hour EC ₅₀ Daphnia:	0.28 mg/l		

Data on Triclopyr BEE:

96-hour LC ₅₀ Bluegill:	0.36 mg/l	Bobwhite Quail Oral LD ₅₀ :	735 mg/kg
96-hour LC ₅₀ Rainbow Trout:	0.65 mg/l	Bobwhite Quail 8-day Dietary LC ₅₀ :	5,401 ppm
48-hour EC ₅₀ Daphnia:	10.1 mg/l	Mallard Duck 8-day Dietary LC ₅₀ :	>5,401 ppm

Data on Dicamba:

96-hour LC ₅₀ Bluegill:	135 mg/l	Bobwhite Quail 8-day Dietary LC ₅₀ :	>10,000 ppm
96-hour LC ₅₀ Rainbow Trout:	135 mg/l	Mallard Duck 8-day Dietary LC ₅₀ :	>10,000 ppm
48-hour EC ₅₀ Daphnia:	110 mg/l	48-hour Honey Bee Contact LD ₅₀ :	>100 µg/bee

Environmental Fate:

MCPA 2-EHE is rapidly de-esterified to parent MCPA acid in the environment. In soil, MCPA is microbially degraded with a typical half-life of approximately 10 to 14 days. In laboratory and field studies, Triclopyr BEE hydrolyzes to parent acid in the environment. Triclopyr is moderately persistent and mobile. In soil, the predominant degradation pathway is microbial and the average half-life is 30 days. Half-lives tend to be shorter in warm, moist soils with a high organic content. The predominant degradation pathway for triclopyr in water is photodegradation and the average half-life is one day. Initially, triclopyr BEE may bind to suspended organic particles or sediments in the water and while bound effectively lengthen the half-life in water. Dicamba has low bioaccumulation potential, is not persistent in soil, is highly mobile in soil and degrades rapidly.

13. DISPOSAL CONSIDERATIONS

Waste Disposal Method:

If container is damaged or if pesticide has leaked contain all spillage. Absorb and clean up all spilled material with granules or sand. Place in a closed labeled container for proper disposal. Wastes resulting from the use of this product may be disposed of on site or at an approved waste disposal facility.

Container Handling and Disposal:

Nonrefillable Containers 5 Gallons or Less: Nonrefillable container. Do not reuse or refill this container. Offer for recycling if available. Triple rinse container (or equivalent) promptly after emptying.

Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank and drain for 10 seconds after the flow begins to drip. Fill the container 1/4 full with water and recap. Shake for 10 seconds. Pour rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Drain for 10 seconds after the flow begins to drip. Repeat this procedure two more times. Then offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill, or by other procedures approved by State and local authorities. Plastic containers are also disposable by incineration, or, if allowed by State and local authorities, by burning. If burned stay out of smoke.

Nonrefillable containers larger than 5 gallons: Nonrefillable container. Do not reuse or refill this container. Offer for recycling if available. If recycling or reconditioning not available, puncture and dispose of in a sanitary landfill, or by other procedures approved by State and local authorities. Plastic containers are also disposable by incineration, or, if allowed by State and local authorities, by burning. If burned stay out of smoke. Triple rinse or pressure rinse container (or equivalent) promptly after emptying.

Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank. Fill the container 1/4 full with water. Replace and tighten closures. Tip container on its side and roll it back and forth, ensuring at least one complete revolution, for 30 seconds. Stand the container on its end and tip it back and forth several times. Turn the container over onto its other end and tip it back and forth several times. Empty

the rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Repeat this procedure two more times.

Pressure rinse as follows: Empty the remaining contents into application equipment or a mix tank and continue to drain for 10 seconds after the flow begins to drip. Hold container upside down over application equipment or mix tank or collect rinsate for later use or disposal. Insert pressure rinsing nozzle in the side of the container, and rinse at about 40 psi for at least 30 seconds. Drain for 10 seconds after the flow begins to drip.

Refillable containers larger than 5 gallons: Refillable container. Refill this container with pesticide only. Do not reuse this container for any other purpose. Cleaning the container before final disposal is the responsibility of the person disposing of the container. Cleaning before refilling is the responsibility of the refiller. To clean the container before final disposal, empty the remaining contents from this container into application equipment or a mix tank. Fill the container about 10% full with water. Agitate vigorously or recirculate water with the pump for two minutes. Pour or pump rinsate into application equipment or rinsate collection system. Repeat this rinsing procedure two more times.

14. TRANSPORTATION INFORMATION

Follow the precautions indicated in Section 7: HANDLING AND STORAGE of this SDS.

DOT:

< 119 gallons per complete package

Non Regulated

≥ 119 gallons per complete package

UN 3082, Environmentally hazardous substance, liquid, n.o.s. (Triclopyr BEE), 9, III, Marine Pollutant

≥ 3,228 gallons per completed package

UN 3082, Environmentally hazardous substance, liquid, n.o.s. (Dicamba), 9, III, RQ, Marine Pollutant

IMDG

UN 3082, Environmentally hazardous substance, liquid, n.o.s. (Triclopyr BEE), 9, III, Marine Pollutant

IATA

UN 3082, Environmentally hazardous substance, liquid, n.o.s. (Triclopyr BEE), 9, III, Marine Pollutant

15. REGULATORY INFORMATION

EPA FIFRA INFORMATION

This chemical is a pesticide product registered by the United States Environmental Protection Agency and is subject to certain labeling requirements under federal pesticide law. These requirements differ from the classification criteria and hazard information required for safety data sheets (SDS), and for workplace labels of non-pesticide chemicals. The hazard information required on the pesticide label is reproduced below. The pesticide label also includes other important information, including directions for use.

CAUTION. Causes moderate eye irritation. Harmful if swallowed or absorbed through skin. Avoid contact with skin, eyes or clothing. Wash thoroughly with soap and water after handling.

U.S. FEDERAL REGULATIONS

TSCA Inventory: This product is exempted from TSCA because it is solely for FIFRA regulated use.

SARA Hazard Notification/Reporting:

Hazard Categories Under Criteria of SARA Title III Rules (40 CFR Part 370.66):

Acute Health

Section 313 Toxic Chemical(s):

Dicamba (CAS No. 1918-00-9), 3.85 – 4.25% by weight in product

Reportable Quantity (RQ) under U.S. CERCLA:

Dicamba (CAS No. 1918-00-9) 1,000 pounds

RCRA Waste Code:

Under RCRA, it is the responsibility of the product user to determine at the time of disposal, whether a material containing the product or derived from the product should be classified as a hazardous waste.

State Information:

Other state regulations may apply. Check individual state requirements.

California Proposition 65: Not Listed.

16. OTHER INFORMATION

National Fire Protection Association (NFPA) Hazard Rating:

Rating for this product: Health: 2 Flammability: 1 Reactivity: 0

Hazards Scale: 0 = Minimal 1 = Slight 2 = Moderate 3 = Serious 4 = Severe

This Safety Data Sheet (SDS) serves different purposes than and DOES NOT REPLACE OR MODIFY THE EPA-ACCEPTED PRODUCT LABELING (attached to and accompanying the product container). This SDS provides important health, safety and environmental information for employers, employees, emergency responders and others handling large quantities of the product in activities generally other than product use, while the labeling provides that information specifically for product use in the ordinary course.

Use, storage and disposal of pesticide products are regulated by the EPA under the authority of the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) through the product labeling, and all necessary and appropriate precautionary, use, storage, and disposal information is set forth on that labeling. It is a violation of Federal law to use a pesticide product in any manner not prescribed on the EPA-accepted label.

Although the information and recommendations set forth herein (hereinafter "Information") are presented in good faith and believed to be correct as of the date hereof, Nufarm Americas Inc. makes no representations as to the completeness or accuracy thereof. Information is supplied upon the condition that the persons receiving same will make their own determination as to its suitability for their purposes prior to use. In no event will Nufarm Americas Inc. be responsible for damages of any nature whatsoever resulting from the use of or reliance upon Information. NO REPRESENTATIONS OR WARRANTIES, EITHER EXPRESS OR IMPLIED, OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR OF ANY OTHER NATURE ARE MADE HEREUNDER WITH RESPECT TO INFORMATION OR THE PRODUCT TO WHICH INFORMATION REFERS AND ALL SUCH WARRANTIES ARE HEREBY SPECIFICALLY DISCLAIMED.

Date of Issue: April 11, 2015

Supersedes: October 1, 2014

Cool Power is a registered trademark of Nufarm Americas Inc.



Safety Data Sheet



REWARD® Landscape and Aquatic

Date: 6/17/2015
Replaces: 12/31/2014

DIQUAT

1. PRODUCT IDENTIFICATION

Product identifier on label: **REWARD® Landscape and Aquatic**

Product No.: A12872A

Use: Herbicide

Manufacturer: Syngenta Crop Protection, LLC
Post Office Box 18300
Greensboro NC 27419

Manufacturer Phone: 1-800-334-9481

Emergency Phone: 1-800-888-8372

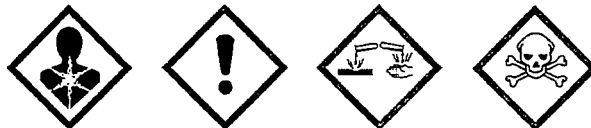
2. HAZARDS IDENTIFICATION

Classifications: Corrosive to Metals: Category 1
Oral: Category 4
Inhalation: Category 3
Specific Target Organ Toxicity: Repeated Category 2

Signal Word (OSHA): Danger

Hazard Statements: May be corrosive to metals
Harmful if swallowed
Toxic if inhaled
May cause damage to organs through prolonged or repeated exposure

Hazard Symbols:



Precautionary Statements: Keep only in original container.
Do not breathe mist, vapors, spray.
Wash hands and face thoroughly after handling.
Do not eat, drink or smoke when using this product.
Use only outdoors or in a well-ventilated area.
If swallowed: Call a poison center, doctor or Syngenta if you feel unwell. Rinse mouth.
If inhaled: Remove person to fresh air and keep comfortable for breathing.
Call a poison center, doctor or Syngenta.
Get medical advice if you feel unwell.
See Section 4 First Aid Measures.
Absorb spillage to prevent material damage.
Store locked up.

REWARD® Landscape and Aquatic

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Store in corrosive resistant plastic, plastic-lined steel, stainless steel or fiberglass container.

Dispose of contents and container in accordance with local regulations.

Other Hazard Statements: Flammable hydrogen gas may be formed on contact with incompatible metals. See "Conditions to Avoid", Section 10.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	Common Name	CAS Number	Concentration
Other ingredients	Other ingredients	Trade Secret	62.7%
[6,7-dihydrodipyrido(1,2-a:2',1'-c)pyrazinediium dibromide]	Diquat Dibromide	85-00-7	37.3%

Ingredients not precisely identified are proprietary or non-hazardous. Values are not product specifications.

4. FIRST AID MEASURES

Have the product container, label or Safety Data Sheet with you when calling Syngenta (800-888-8372), a poison control center or doctor, or going for treatment.

Ingestion: If swallowed: Call Syngenta (800-888-8372), a poison control center or doctor immediately for treatment advice. Do not give any liquid to the person. Do not induce vomiting unless told to do so after calling 800-888-8372 or by a poison control center or doctor. Do not give anything by mouth to an unconscious person.

Eye Contact: If in eyes: Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after 5 minutes, then continue rinsing eye. Call Syngenta (800-888-8372), a poison control center or doctor for treatment advice.

Skin Contact: If on skin or clothing: Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call Syngenta (800-888-8372), a poison control center or doctor for treatment advice.

Inhalation: If inhaled: Move person to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth if possible. Call Syngenta (800-888-8372), a poison control center or doctor for further treatment advice.

Most important symptoms/effects:

Not Applicable

Indication of immediate medical attention and special treatment needed:

To be effective, treatment for ingestion of the product must begin IMMEDIATELY. Treatment consists of binding the active ingredient, diquat, in the gut with suspensions of activated charcoal or bentonite clay, administration of cathartics to enhance elimination and removal of diquat from the blood by charcoal hemoperfusion or continuous hemodialysis.

5. FIRE FIGHTING MEASURES

Suitable (and unsuitable) extinguishing media:

Use dry chemical, foam or CO2 extinguishing media. If water is used to fight fire, dike and collect runoff.

Specific Hazards:

This product may form flammable and explosive hydrogen gas when in contact with aluminum.

During a fire, irritating and possibly toxic gases may be generated by thermal decomposition or combustion.

Special protective equipment and precautions for firefighters:

Wear full protective clothing and self-contained breathing apparatus. Evacuate nonessential personnel from the area to prevent human exposure to fire, smoke, fumes or products of combustion.

REWARD® Landscape and Aquatic

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6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment, and emergency procedures:
 Follow exposure controls/personal protection outlined in Section 8.

Methods and materials for containment and cleaning up:

Control the spill at its source. Contain the spill to prevent from spreading or contaminating soil or from entering sewage and drainage systems or any body of water. Clean up spills immediately, observing precautions outlined in Section 8. Cover entire spill with absorbing material and place into compatible disposal container. Scrub area with hard water detergent (e.g. commercial products such as Tide, Joy, Spic and Span). Pick up wash liquid with additional absorbent and place into compatible disposal container. Once all material is cleaned up and placed in a disposal container, seal container and arrange for disposition.

7. HANDLING AND STORAGE

Precautions for safe handling:

This product reacts with aluminum to produce flammable hydrogen gas. Do not mix or store in containers or systems made of aluminum or having aluminum fittings.

Store the material in a well-ventilated, secure area out of reach of children and domestic animals. Do not store food, beverages or tobacco products in the storage area. Prevent eating, drinking, tobacco use, and cosmetic application in areas where there is a potential for exposure to the material. Wash thoroughly with soap and water after handling.

Conditions for safe storage, including any incompatibilities:
 Store locked up.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

THE FOLLOWING RECOMMENDATIONS FOR EXPOSURE CONTROLS/PERSONAL PROTECTION ARE INTENDED FOR THE MANUFACTURE, FORMULATION AND PACKAGING OF THIS PRODUCT.

FOR COMMERCIAL APPLICATIONS AND/OR ON-FARM APPLICATIONS CONSULT THE PRODUCT LABEL.

Occupational Exposure Limits:

Chemical Name	OSHA PEL	ACGIH TLV	Other	Source
Other ingredients	Not Applicable	Not Applicable	Not Applicable	Not Applicable
Diquat Dibromide	Not Established	0.5 mg/m ³ TWA inhalable; 0.1mg/m ³ TWA respirable	0.5 mg/m ³ TWA	Syngenta

Appropriate engineering controls:

Use effective engineering controls to comply with occupational exposure limits (if applicable).

Individual protection measures:

Ingestion:

Prevent eating, drinking, tobacco usage and cosmetic application in areas where there is a potential for exposure to the material. Wash thoroughly with soap and water after handling.

Eye Contact:

Where eye contact is likely, use chemical splash goggles.

Skin Contact:

Where contact is likely, wear chemical-resistant gloves (such as barrier laminate, butyl rubber, nitrile rubber, neoprene

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rubber, natural rubber, polyvinyl chloride [PVC] or Viton), coveralls, socks and chemical-resistant footwear.

Inhalation:

A respirator is not normally required when handling this substance. Use effective engineering controls to comply with occupational exposure limits.

In case of emergency spills, use a NIOSH approved respirator with any N, R, P or HE filter.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance: Dark brown liquid

Odor: Odorless

Odor Threshold: Not Available

pH: 4 - 6

Melting point/freezing point: Not Applicable

Initial boiling point and boiling range: Not Available

Flash Point (Test Method): Not Applicable

Flammable Limits (% in Air): Not Available

Flammability: Not Applicable

Vapor Pressure: Diquat Dibromide < 10(-8) mmHg @ 77°F (25°C)

Vapor Density: Not Available

Relative Density: 1.202 g/ml @ 68°F (20°C)

Solubility (ies): Diquat Dibromide 718,000 mg/l @ 68°F (20°C) and pH 7.2

Partition coefficient: n-octanol/water: Not Available

Autoignition Temperature: Not Applicable

Decomposition Temperature: Not Available

Viscosity: Not Available

Other: None

10. STABILITY AND REACTIVITY

Reactivity: Not reactive.

Chemical stability: Stable under normal use and storage conditions.

Possibility of hazardous reactions: Will not occur.

Conditions to Avoid: Concentrate should not be stored in aluminum containers. Spray solutions should not be mixed, stored or applied in containers other than plastic, plastic-lined steel, stainless steel or fiberglass.

Incompatible materials: None known.

Hazardous Decomposition Products: Flammable hydrogen gas may be formed on contact with aluminum. See "Conditions to Avoid", Section 10.

REWARD® Landscape and Aquatic

Date: 6/17/2015

Replaces: 12/31/2014

11. TOXICOLOGICAL INFORMATION

Health effects information

Likely routes of exposure: Dermal, Inhalation

Symptoms of exposure: Not Applicable

Delayed, immediate and chronic effects of exposure: Not Applicable

Numerical measures of toxicity (acute toxicity/irritation studies (finished product))

Ingestion:	Oral (LD50 Female Rat) :	886 mg/kg body weight
Dermal:	Dermal (LD50 Rabbit) :	> 5050 mg/kg body weight
Inhalation:	Inhalation (LC50 Rat) :	0.62 mg/l air - 4 hours
Eye Contact:	Mildly Irritating (Rabbit)	
Skin Contact:	Slightly Irritating (Rabbit)	
Skin Sensitization:	Not a Sensitizer (Guinea Pig)	

Reproductive/Developmental Effects

Diquat Dibromide: Mutagenicity: No evidence in in vivo assays.

Development Toxicity: In rabbit studies a small percentage of fetuses had minor defects at 3 and 10 mg ion/kg/d.

Chronic/Subchronic Toxicity Studies

Diquat Dibromide: Kidney weight decreases and cataracts seen in dogs at 12.5 mg ion/kg/d.

No evidence for neurotoxic effects in rats dosed up to 400 ppm ion in the diet for 13 weeks.

Carcinogenicity

Diquat Dibromide: No evidence of carcinogenicity in rat and mouse studies.

Chemical Name	NTP/IARC/OSHA Carcinogen
---------------	--------------------------

Other ingredients	No
-------------------	----

[6,7-dihydrodipyrido(1,2-a:2',1'-c)pyrazinedium dibromide]	No
--	----

Other Toxicity Information

None

Toxicity of Other Components

Other ingredients

Not Applicable

Target Organs

Active Ingredients

Diquat Dibromide: Eye, kidney

Inert Ingredients

Other ingredients: Not Applicable

REWARD® Landscape and Aquatic

Date: 6/17/2015

Replaces: 12/31/2014

12. ECOLOGICAL INFORMATION

Eco-Acute Toxicity

Diquat Dibromide:

Fish (Rainbow Trout) 96-hour LC50 14.83 ppm

Invertebrate (Water Flea) Daphnia Magna 48-hour EC50 0.77 ppm

Green Algae 4-day EC50 9.4 ppb

Bird (Mallard Duck) 14-day LD50 60.6 mg/kg

Environmental Fate

Diquat Dibromide:

The information presented here is for the active ingredient, diquat dibromide.
Stable in soil and water. Immobile in soil. Sinks in water (after 24 h).

13. DISPOSAL CONSIDERATIONS

Disposal:

Do not reuse product containers. Dispose of product containers, waste containers, and residues according to local, state, and federal health and environmental regulations.

Characteristic Waste: Not Applicable

Listed Waste: Not Applicable

14. TRANSPORT INFORMATION

DOT Classification

Ground Transport - NAFTA

Proper Shipping Name: Corrosive Liquid, N.O.S. (Diquat Dibromide)

Hazard Class: Class 8

Identification Number: UN 1760

Packing Group: PG III

Comments

Water Transport - International

Proper Shipping Name: Corrosive Liquid, N.O.S. (Diquat Dibromide), Marine Pollutant

Hazard Class: Class 8

Identification Number: UN 1760

Packing Group: PG III

Air Transport

Proper Shipping Name: Corrosive Liquid, N.O.S. (Diquat Dibromide)

Hazard Class: Class 8

Identification Number: UN 1760

Packing Group: PG III

REWARD® Landscape and Aquatic

Date: 6/17/2015

Replaces: 12/31/2014

15. REGULATORY INFORMATION

Pesticide Registration:

This chemical is a pesticide product registered by the Environmental Protection Agency and is subject to certain labeling requirements under federal pesticide law. These requirements differ from the classification criteria and hazard information required for safety data sheets, and for workplace labels of non-pesticide chemicals. Following is the hazard information as required on the pesticide label:

Caution: Harmful if inhaled. Harmful if swallowed. Causes moderate eye irritation. Avoid breathing spray mist. Avoid contact with eyes, skin, or clothing.

EPA Registration Number(s):

100-1091

EPCRA SARA Title III Classification:

Section 311/312 Hazard Classes: Acute Health Hazard

Section 313 Toxic Chemicals: None

CERCLA/SARA 304 Reportable Quantity (RQ):

Report product spills >= 268 gal. (based on diquat [RQ = 1,000 lbs.] content in the formulation)

RCRA Hazardous Waste Classification (40 CFR 261):

Not Applicable

TSCA Status:

Exempt from TSCA, subject to FIFRA

16. OTHER INFORMATION

NFPA Hazard Ratings

Health: 2
 Flammability: 1
 Instability: 0

HMS Hazard Ratings

Health: 2
 Flammability: 1
 Reactivity: 0

0	Minimal
1	Slight
2	Moderate
3	Serious
4	Extreme
*	Chronic

Syngenta Hazard Category: C

For non-emergency questions about this product call:

1-800-334-9481

Original Issued Date: 6/27/2007

Revision Date: 6/17/2015

Replaces: 12/31/2014

Section(s) Revised: 2, 4, 11, 16

The information and recommendations contained herein are based upon data believed to be correct. However, no guarantee or warranty of any kind, expressed or implied, is made with respect to the information contained herein.



FUSILADE® II TURF AND ORNAMENTAL Herbicide

Date: 10/17/2014
Replaces: 9/18/2014

1. PRODUCT IDENTIFICATION

Product identifier on label: **FUSILADE® II TURF AND ORNAMENTAL Herbicide**

Product No.: A12460A

Use: Herbicide

Manufacturer: Syngenta Crop Protection, LLC
Post Office Box 18300
Greensboro NC 27419

Manufacturer Phone: 1-800-334-9481

Emergency Phone: 1-800-888-8372

2. HAZARDS IDENTIFICATION

Classifications: Skin Corrosion/Irritation: Category 2
Skin Sensitizer: Category 1B
Reproductive Toxicity: Category 2
Specific Target Organ Toxicity: Repeated Category 2
Aspiration Hazard: Category 1
Eye Damage/Irritation: Category 2B
Carcinogenicity: Category 1B
Inhalation: Category 2

Signal Word (OSHA): Danger

Hazard Statements: May be fatal if swallowed and enters airways
Causes skin irritation
May cause an allergic skin reaction
Causes eye irritation
Fatal if inhaled
May cause cancer
Suspected of damaging fertility or the unborn child
May cause damage to organs through prolonged or repeated exposure

Hazard Symbols:



Precautionary Statements: Obtain special instructions before use.
Do not handle until all safety precautions have been read and understood.
Do not breathe mist, vapors, spray.
Wash hands and face thoroughly after handling.

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Use only outdoors or in a well-ventilated area.
 Contaminated work clothing must not be allowed out of the workplace.
 Wear protective gloves, protective clothing, eye protection.
 In case of inadequate ventilation wear respiratory protection. See Section 8 Exposure Control/Personal Protection.
 If inhaled: Remove person to fresh air and keep comfortable for breathing.
 If swallowed: Immediately call a poison center, doctor or Syngenta.
 If on skin: Wash with plenty of soap and water.
 If skin irritation occurs: Get medical advice.
 If skin irritation or rash occurs: Get medical advice.
 If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
 If eye irritation persists: Get medical advice.
 If exposed or concerned: Get medical advice/attention.
 Immediately call a poison center, doctor or Syngenta.
 Get medical advice if you feel unwell.
 Specific treatment is urgent (see Section 4 First Aid Measures).
 See Section 4 First Aid Measures.
 Do NOT induce vomiting.
 Take off contaminated clothing and wash it before reuse.
 Wash contaminated clothing before reuse.
 Store locked up.
 Dispose of contents and container in accordance with local regulations.

Other Hazard Statements: None

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	Common Name	CAS Number	Concentration
Naphthalene	Naphthalene	91-20-3	Trade Secret
Petroleum Solvent	Petroleum Solvent	64742-94-5	Trade Secret
Petroleum distillates, light paraffinic	Petroleum distillates, light paraffinic	64741-89-5	Trade Secret
Other ingredients	Other ingredients	Trade Secret	75.5%
Butyl(RS)-2-[4-[[5-(trifluoromethyl)-2-pyridinyl]oxy]phenoxy]propanoate	Fluazifop-P-Butyl	79241-46-6	24.5%

Ingredients not precisely identified are proprietary or non-hazardous. Values are not product specifications.

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4. FIRST AID MEASURES

Have the product container, label or Safety Data Sheet with you when calling Syngenta (800-888-8372), a poison control center or doctor, or going for treatment.

- Ingestion:** If swallowed: Call Syngenta (800-888-8372), a poison control center or doctor immediately for treatment advice. Do not give any liquid to the person. Do not induce vomiting unless told to do so after calling 800-888-8372 or by a poison control center or doctor. Do not give anything by mouth to an unconscious person.
- Eye Contact:** If in eyes: Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after 5 minutes, then continue rinsing eye. Call Syngenta (800-888-8372), a poison control center or doctor for treatment advice.
- Skin Contact:** If on skin or clothing: Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call Syngenta (800-888-8372), a poison control center or doctor for treatment advice.
- Inhalation:** If inhaled: Move person to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth if possible. Call Syngenta (800-888-8372), a poison control center or doctor for further treatment advice.

Most important symptoms/effects:

- Eye irritation
- Skin irritation
- Allergic skin reaction

Indication of immediate medical attention and special treatment needed:

There is no specific antidote if this product is ingested.

Treat symptomatically.

Persons suffering a temporary allergic reaction may respond to treatment with antihistamines or steroid creams and/or systemic steroids.

Contains petroleum distillate - vomiting may cause aspiration pneumonia.

5. FIRE FIGHTING MEASURES

Suitable (and unsuitable) extinguishing media:

Use dry chemical, foam or CO2 extinguishing media. If water is used to fight fire, dike and collect runoff.

Specific Hazards:

During a fire, irritating and possibly toxic gases may be generated by thermal decomposition or combustion.

Special protective equipment and precautions for firefighters:

Wear full protective clothing and self-contained breathing apparatus. Evacuate nonessential personnel from the area to prevent human exposure to fire, smoke, fumes or products of combustion.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment, and emergency procedures:

Follow exposure controls/personal protection outlined in Section 8.

Methods and materials for containment and cleaning up:

Control the spill at its source. Contain the spill to prevent from spreading or contaminating soil or from entering sewage and drainage systems or any body of water. Clean up spills immediately, observing precautions in Protective Equipment Section. Cover entire spill with absorbing material and place into compatible disposal container. Scrub area with hard water detergent (e.g. commercial products such as Tide, Joy, Spic and Span). Pick up wash liquid with additional absorbent and place into compatible disposal container. Once all material is cleaned up and placed in a disposal container, seal container and arrange for disposition.

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7. HANDLING AND STORAGE

Precautions for safe handling:

Store the material in a well-ventilated, secure area out of reach of children and domestic animals. Do not store food, beverages or tobacco products in the storage area. Prevent eating, drinking, tobacco use, and cosmetic application in areas where there is a potential for exposure to the material. Wash thoroughly with soap and water after handling.

Conditions for safe storage, including any incompatibilities:

Store locked up.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

THE FOLLOWING RECOMMENDATIONS FOR EXPOSURE CONTROLS/PERSONAL PROTECTION ARE INTENDED FOR THE MANUFACTURE, FORMULATION AND PACKAGING OF THIS PRODUCT.

FOR COMMERCIAL APPLICATIONS AND/OR ON-FARM APPLICATIONS CONSULT THE PRODUCT LABEL.

Occupational Exposure Limits:

Chemical Name	OSHA PEL	ACGIH TLV	Other	Source
Naphthalene	10 ppm TWA	10 ppm TWA (skin)	10 ppm TWA	NIOSH
Petroleum Solvent	Not Established	Not Established	100 mg/m ³ (15-17 ppm) TWA	Manufacturer
Petroleum distillates, light paraffinic	Not Established	Not Established	Not Established	Not Applicable
Other ingredients	Not Applicable	Not Applicable	Not Applicable	Not Applicable
Fluazifop-P-Butyl	Not Established	Not Established	0.5 mg/m ³ TWA	Syngenta

Appropriate engineering controls:

Use effective engineering controls to comply with occupational exposure limits (if applicable).

Individual protection measures:

Ingestion:

Prevent eating, drinking, tobacco usage and cosmetic application in areas where there is a potential for exposure to the material. Wash thoroughly with soap and water after handling.

Eye Contact:

Where eye contact is likely, use chemical splash goggles.

Skin Contact:

Where contact is likely, wear chemical-resistant gloves (such as barrier laminate, nitrile rubber, neoprene rubber or Viton), coveralls, socks and chemical-resistant footwear.

Inhalation:

A combination particulate/organic vapor respirator should be used until effective engineering controls are installed to comply with occupational exposure limits, or until exposure limits are established. Use a NIOSH approved respirator with an organic vapor (OV) cartridge or canister with any R, P or HE filter.

Use a self-contained breathing apparatus in cases of emergency spills, when exposure levels are unknown, or under any circumstances where air-purifying respirators may not provide adequate protection.

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9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance: Dark brown liquid, free of sediment
Odor: Aromatic
Odor Threshold: Not Available
pH: 6.2 (1% w/w dilution in deionized water)
Melting point/freezing point: Not Applicable
Initial boiling point and boiling range: Not Available
Flash Point (Test Method): > 212°F (TCC)
Flammable Limits (% in Air): Not Available
Flammability: Not Applicable
Vapor Pressure: Fluazifop-P-Butyl 4.5 x 10⁽⁻⁷⁾ mmHg @ 68°F (20°C)
Vapor Density: Not Available
Relative Density: 0.9807 g/ml @ 68°F (20°C)
Solubility (ies): Fluazifop-P-Butyl Almost insoluble in water (1 mg/l @ pH 5 - 6.5)
Partition coefficient: n-octanol/water: Not Available
Autoignition Temperature: Not Available
Decomposition Temperature: Not Available
Viscosity: Not Available
Other: None

10. STABILITY AND REACTIVITY

Reactivity: Not reactive.
Chemical stability: Stable under normal use and storage conditions.
Possibility of hazardous reactions: Will not occur.
Conditions to Avoid: None known.
Incompatible materials: None known.
Hazardous Decomposition Products: None known.

11. TOXICOLOGICAL INFORMATION

Health effects information

Likely routes of exposure: Dermal, Inhalation

Symptoms of exposure: Eye irritation, Skin irritation

Delayed, immediate and chronic effects of exposure: Possible carcinogenicity, Eye irritation, Skin irritation, Allergic skin reaction

Numerical measures of toxicity (acute toxicity/irritation studies (finished product))

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Ingestion:	Oral (LD50 Rat) :	> 5000 mg/kg body weight
Dermal:	Dermal (LD50 Rabbit) :	> 2000 mg/kg body weight
Inhalation:	Inhalation (LC50 Animal Not Available) :	0.54 mg/l air - 4 hours
Eye Contact:	Slightly Irritating (Rabbit)	
Skin Contact:	Moderately Irritating (Rabbit)	
Skin Sensitization:	See "Other Toxicity Information", Sec. 11	

Reproductive/Developmental Effects

Fluazifop-P-Butyl : Embryo/foetoxic effects have been reported in rats. Did not show teratogenic effects in animal experiments.

Chronic/Subchronic Toxicity Studies

Fluazifop-P-Butyl : Effects on red cells, bone marrow, liver and spleen observed in long-term high dose feeding tests in dogs. No adverse health effects are expected in humans at airborne levels below the occupational exposure limit.

Carcinogenicity

Fluazifop-P-Butyl : Did not show mutagenic effects in animal experiments. Did not show carcinogenic effects in animal experiments.

Chemical Name	NTP/IARC/OSHA Carcinogen
Naphthalene	See "Toxicity", Sec. 11
Petroleum Solvent	No
Petroleum distillates, light paraffinic	No
Other ingredients	No
Butyl(RS)-2-[4-[[5-(trifluoromethyl)-2-pyridinyl]oxy]phenoxy]propanoate	No

Other Toxicity Information

Repeated and/or prolonged contact may cause skin sensitization.

Toxicity of Other Components

Naphthalene

Exposure to naphthalene can cause cataracts, liver damage, kidney failure, respiratory failure, hematuria, anemia, damage to red blood cells, leukocytosis, or coma.

Carcinogen Status:

NTP: Anticipated Carcinogen

IARC: Group 2B Possible Human Carcinogen

Other ingredients

Not Applicable

Petroleum Solvent

May cause irritation to the eyes, skin and respiratory system. Excessive inhalation causes headache, dizziness, nausea and loss of motor skills.

Petroleum distillates, light paraffinic

May cause respiratory tract irritation. Harmful if swallowed. Pulmonary aspiration hazard.

Target Organs

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Active Ingredients

Fluazifop-P-Butyl : Blood, bone marrow, liver, spleen

Inert Ingredients

Naphthalene: Eye, liver, kidney, respiratory tract, blood, CNS

Other ingredients: Not Applicable

Petroleum Solvent: Eye, skin, respiratory system, central nervous system

Petroleum distillates, light paraffinic: Respiratory tract

12. ECOLOGICAL INFORMATION

Eco-Acute Toxicity

Fluazifop-P-Butyl :

Invertebrate (Water Flea) Daphnia Magna 48-hour EC50 6.02 ppm

Green Algae 4-day EC50 > 1.8 ppm

Bird (Mallard Duck) 14-day LD50 > 3528 mg/kg

Environmental Fate

Fluazifop-P-Butyl :

The information presented here is for the active ingredient, fluazifop-p-butyl.
Not persistent in soil or water.

13. DISPOSAL CONSIDERATIONS

Disposal:

Do not reuse product containers. Dispose of product containers, waste containers, and residues according to local, state, and federal health and environmental regulations.

Characteristic Waste: Not Applicable

Listed Waste: Not Applicable

14. TRANSPORT INFORMATION

DOT Classification

Ground Transport - NAFTA

< 300 gallons: Not regulated

> 300 gallons:

Proper Shipping Name: Other Regulated Substances, Liquid, N.O.S. (RQ - Naphthalene)

Hazard Class: Class 9

Identification Number: NA 3082

Packing Group: PG III

Comments

Water Transport - International

Proper Shipping Name: Environmentally Hazardous Substance, Liquid, N.O.S. (Fluazifop), Marine Pollutant

Hazard Class: Class 9

Identification Number: UN 3082

Packing Group: PG III

Air Transport

Proper Shipping Name: Environmentally Hazardous Substance, Liquid, N.O.S. (Fluazifop)

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Hazard Class: Class 9
 Identification Number: UN 3082
 Packing Group: PG III

15. REGULATORY INFORMATION

Pesticide Registration:

This chemical is a pesticide product registered by the Environmental Protection Agency and is subject to certain labeling requirements under federal pesticide law. These requirements differ from the classification criteria and hazard information required for safety data sheets, and for workplace labels of non-pesticide chemicals. Following is the hazard information as required on the pesticide label:

Caution: Harmful if absorbed through skin or inhaled. Causes eye irritation. Prolonged or frequently repeated skin contact may cause allergic reactions in some individuals. Avoid contact with skin, eyes or clothing. Avoid breathing vapor or spray mist.

EPA Registration Number(s):
 100-1084

EPCRA SARA Title III Classification:

Section 311/312 Hazard Classes: Acute Health Hazard
 Chronic Health Hazard

Section 313 Toxic Chemicals: Naphthalene Trade Secret (CAS No. 91-20-3)

California Proposition 65:

This product contains a chemical(s) known to the state of California to cause cancer and birth defects or other reproductive harm.

CERCLA/SARA 304 Reportable Quantity (RQ):

Report product spills > 305 gal. (based on naphthalene [RQ = 100 lbs.] content in the formulation)

RCRA Hazardous Waste Classification (40 CFR 261):

Not Applicable

TSCA Status:

Exempt from TSCA, subject to FIFRA

16. OTHER INFORMATION

NFPA Hazard Ratings

Health: 2
 Flammability: 1
 Instability: 0

HMIS Hazard Ratings

Health: 2
 Flammability: 1
 Reactivity: 0

0	Minimal
1	Slight
2	Moderate
3	Serious
4	Extreme
*	Chronic

Syngenta Hazard Category: C,S

For non-emergency questions about this product call:

1-800-334-9481

Original Issued Date: 11/25/1998
 Revision Date: 10/17/2014 Replaces: 9/18/2014
 Section(s) Revised: 1-16

Safety Data Sheet



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Replaces: 9/18/2014

The information and recommendations contained herein are based upon data believed to be correct. However, no guarantee or warranty of any kind, expressed or implied, is made with respect to the information contained herein.

Issue Date 24-Nov-2014

Revision Date 07-Jan-2015

Version 1

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

Product identifier

Product Name Q4® Plus Turf Herbicide for Grassy & Broadleaf Weeds

Other means of identification

Product Code PBI FP 697-6

EPA Pesticide Registration Number 2217-930

Recommended use of the chemical and restrictions on use

Recommended Use Herbicide.

Uses advised against No information available.

Details of the supplier of the safety data sheet

Supplier

PBI Gordon Corporation
 1217 West 12th Street
 Kansas City, MO 64101

Manufacturer

PBI Gordon Corporation
 1217 West 12th Street
 Kansas City, MO 64101

Company Name

PBI Gordon Corporation
 1217 West 12th Street
 Kansas City, MO 64101

Emergency telephone number

Emergency Telephone Chemtrec 1-800-424-9300

2. HAZARDS IDENTIFICATION

Classification

OSHA Regulatory Status

This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Acute toxicity - Inhalation (Gases)	Category 4
Serious eye damage/eye irritation	Category 1
Skin sensitization	Category 1

The International Agency for Research on Cancer (IARC) lists chlorophenoxy herbicides in its Group 2B (limited evidence for Carcinogenicity in humans.) The US EPA has given the chlorophenoxy Herbicides 2,4-D, 2,4-DP, MCPP, and MCPA a Class D classification (not classifiable as to human carcinogenicity.) More current 2,4-D lifetime feeding studies in rats and mice did not show carcinogenic effects and a recent World Health Organization (WHO) review of 2,4-D toxicology has concluded that 2,4-D is not a carcinogen.

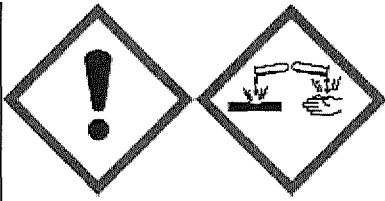
Label elements

Emergency Overview

Danger

Hazard statements

Harmful if inhaled. Causes eye irritation. May cause an allergic skin reaction.



Appearance Liquid

Physical state Liquid

Odor Musty

Precautionary Statements - Prevention

- Avoid breathing dust/fume/gas/mist/vapors/spray
- Use only outdoors or in a well-ventilated area
- Wear protective gloves/protective clothing/eye protection/face protection
- Contaminated work clothing should not be allowed out of the workplace
- Keep container tightly closed

Precautionary Statements - Response

- IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
- If skin irritation or rash occurs: Get medical advice/attention
- Wash contaminated clothing before reuse
- IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower
- IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
- Call a POISON CENTER or doctor/physician if you feel unwell

Precautionary Statements - Storage

- Store in a well-ventilated place. Keep cool

Precautionary Statements - Disposal

- Dispose of contents/container to an approved waste disposal plant

Hazards not otherwise classified (HNOC)

Have the product label with you when calling a poison control center or doctor or going in for treatment. You may also contact 1-877-800-5556 for emergency medical treatment advice.

The low flash point of this product is due to a minor component in the mixture. Based on independent laboratory testing of similar products, this product would not sustain combustion as specified in DOT Regulation 49 CFR 173 Appendix H; however OSHA HCS 2012 flammable classifications are solely based on tested mixture flash points and boiling points.

Other Information

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS No.	Weight-%
2,4-D, dimethylamine salt	2008-39-1	11.81
8-Quinolinecarboxylic acid, 3,7-dichloro-	84087-01-4	8.43
Trade Secret	Proprietary	0-10*
Dimethylamine dicamba	2300-66-5	1.49
Sulfentrazone	122836-35-5	0.69

* The exact percentage (concentration) of composition has been withheld as a trade secret

4. FIRST AID MEASURES

First aid measures

General advice	If symptoms persist, call a physician. Do not breathe dust/fume/gas/mist/vapors/spray. Do not get in eyes, on skin, or on clothing.
Eye contact	Immediately flush with plenty of water. After initial flushing, remove any contact lenses and continue flushing for at least 15 minutes. Keep eye wide open while rinsing. If symptoms persist, call a physician.
Skin Contact	Consult a physician if necessary. Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Immediate medical attention is not required. If skin irritation persists, call a physician.
Inhalation	Remove to fresh air. If breathing is irregular or stopped, administer artificial respiration. Avoid direct contact with skin. Use barrier to give mouth-to-mouth resuscitation. Move to fresh air in case of accidental inhalation of vapors. If symptoms persist, call a physician.
Ingestion	Do NOT induce vomiting. Drink plenty of water. If symptoms persist, call a physician. Rinse mouth. Clean mouth with water and drink afterwards plenty of water. Never give anything by mouth to an unconscious person.
Self-protection of the first aider	Use personal protective equipment as required.

Most important symptoms and effects, both acute and delayed

Symptoms No information available.

Indication of any immediate medical attention and special treatment needed

Note to physicians May cause sensitization of susceptible persons. Treat symptomatically.

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. Water spray (fog). Foam. Dry chemical.

Specific hazards arising from the chemical

In the event of fire and/or explosion do not breathe fumes. May cause sensitization by inhalation and skin contact. Thermal decomposition can lead to release of irritating and toxic gases and vapors.

Explosion data

Sensitivity to Mechanical Impact None.

Sensitivity to Static Discharge None.

Protective equipment and precautions for firefighters

Wear self contained breathing apparatus for fire fighting if necessary.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal precautions Avoid contact with skin, eyes or clothing. Use personal protective equipment as required. Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak.

Environmental precautions

Environmental precautions Prevent entry into waterways, sewers, basements or confined areas. Do not flush into surface water or sanitary sewer system. Prevent further leakage or spillage if safe to do so. Prevent product from entering drains. See Section 12 for additional ecological information.

Methods and material for containment and cleaning up

Methods for containment Prevent further leakage or spillage if safe to do so.

Methods for cleaning up Cover liquid spill with sand, earth or other non-combustible absorbent material. Cover powder spill with plastic sheet or tarp to minimize spreading. Pick up and transfer to properly labeled containers. Soak up with inert absorbent material. Dam up.

7. HANDLING AND STORAGE

Precautions for safe handling

Advice on safe handling Avoid contact with skin, eyes or clothing. Wash contaminated clothing before reuse. Do not eat, drink or smoke when using this product. Use personal protective equipment as required. Do not breathe dust/fume/gas/mist/vapors/spray. Use with local exhaust ventilation.

Conditions for safe storage, including any incompatibilities

Storage Conditions Keep container tightly closed in a dry and well-ventilated place. Keep out of the reach of children. Keep in properly labeled containers.

Incompatible materials Acids.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Exposure Guidelines

Chemical Name	ACGIH TLV	OSHA PEL	NIOSH IDLH
2,4-D, dimethylamine salt 2008-39-1	TWA: 10 mg/m ³ inhalable fraction S*	TWA: 10 mg/m ³	IDLH: 10 mg/m ³ , TWA: 10 mg/m ³
Trade Secret	STEL: 15 ppm TWA: 5 ppm	TWA: 10 ppm TWA: 18 mg/m ³ (vacated) TWA: 10 ppm (vacated) TWA: 18 mg/m ³	IDLH: 500 ppm TWA: 10 ppm TWA: 18 mg/m ³

NIOSH IDLH *Immediately Dangerous to Life or Health*

Other Information Vacated limits revoked by the Court of Appeals decision in AFL-CIO v. OSHA, 965 F.2d 962 (11th Cir., 1992).

Appropriate engineering controls

Engineering Controls No information available.

Individual protection measures, such as personal protective equipment

Eyeface protection Tight sealing safety goggles. Face protection shield.

Skin and body protection Wear protective gloves and protective clothing.

Respiratory protection If exposure limits are exceeded or irritation is experienced, NIOSH/MSHA approved respiratory protection should be worn. Positive-pressure supplied air respirators may be required for high airborne contaminant concentrations. Respiratory protection must be provided in accordance with current local regulations.

General Hygiene Considerations When using do not eat, drink or smoke. Regular cleaning of equipment, work area and clothing is recommended.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Physical state	Liquid	Odor	Musty
Appearance	Liquid	Odor threshold	No information available
Color	Brown		
<u>Property</u>	<u>Values</u>	<u>Remarks • Method</u>	
pH	Not Available		
Melting point/freezing point	<35 °F		
Boiling point / boiling range	100 °C / 212 °F		
Flash point	59 °C / 138 °F		Pensky-Martens Closed Cup (PMCC)
Evaporation rate	< 1		
Flammability (solid, gas)	No information available		
Flammability Limit in Air			
Upper flammability limit:	No information available		
Lower flammability limit:	No information available		
Vapor pressure	<17 mm Hg		
Vapor density	>1		
Specific Gravity	1.0951		
Water solubility	Soluble in water		
Solubility in other solvents	No information available		
Partition coefficient	No information available		
Autoignition temperature	No information available		
Decomposition temperature	No information available		
Oxidizing properties	No information available		

Other Information

Density 9.12 pounds/gallon

10. STABILITY AND REACTIVITY

Reactivity

No data available

Chemical stability

Stable.

Possibility of Hazardous Reactions

None under normal processing.

Hazardous polymerization

Will not occur.

Conditions to avoid

Keep from freezing.

Incompatible materials

Acids.

Hazardous Decomposition Products

May emit toxic fumes under fire conditions. Hydrogen chloride. Nitrogen oxides (NOx). Carbon monoxide.

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Product Information

Inhalation Irritant, moderate respiratory.

Eye contact Mild eye irritation.

Skin Contact Moderate skin irritation.

Ingestion May cause irritation.

Chemical Name	Oral LD50	Dermal LD50	Inhalation LC50
Trade Secret	= 698 mg/kg (Rat)	= 3900 mg/kg (Rat)	= 4540 ppm (Rat) 6 h

Information on toxicological effects

Symptoms No information available.

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Sensitization No information available.

Germ cell mutagenicity No information available.

Carcinogenicity No information available.

Reproductive toxicity No information available.

STOT - single exposure No information available.

STOT - repeated exposure No information available.

Chronic toxicity Repeated contact may cause allergic reactions in very susceptible persons. Avoid repeated exposure.

Target Organ Effects Eyes, Respiratory system, Skin.

Aspiration hazard No information available.

Numerical measures of toxicity - Product Information

Unknown Acute Toxicity 2% of the mixture consists of ingredient(s) of unknown toxicity

The following values are calculated based on chapter 3.1 of the GHS document

- ATEmix (oral) 3373 mg/kg
- ATEmix (dermal) 68003 mg/kg
- ATEmix (inhalation-gas) 18135 mg/L
- ATEmix (inhalation-dust/mist) 38.9 mg/L

12. ECOLOGICAL INFORMATION

Ecotoxicity

Harmful to aquatic life with long lasting effects

11% of the mixture consists of component(s) of unknown hazards to the aquatic environment

Chemical Name	Algae/aquatic plants	Fish	Toxicity to microorganisms	Crustacea
Trade Secret	9: 96 h Pseudokirchneriella subcapitata mg/L EC50	111 - 125: 96 h Oncorhynchus mykiss mg/L LC50 120: 96 h Oncorhynchus mykiss mg/L LC50 static 210: 96 h Poecilia reticulata mg/L LC50 static 127 - 349: 96 h Poecilia reticulata mg/L LC50 semi-static 396: 96 h Brachydanio rerio mg/L LC50 static	EC50 = 26.8 mg/L 15 min	88.7: 48 h Daphnia magna Straus mg/L EC50

Persistence and degradability

No information available.

Bioaccumulation

No information available.

Other adverse effects
No information available

13. DISPOSAL CONSIDERATIONS

Waste treatment methods

Disposal of wastes Disposal should be in accordance with applicable regional, national and local laws and regulations.

Contaminated packaging Do not reuse container, unless specified by the manufacturer.

US EPA Waste Number U240 See Section 2: Hazards not otherwise classified (HNOC)

14. TRANSPORT INFORMATION

DOT

Proper shipping name

For package sizes less than 113 gallons: product is non-regulated.

Description

For package sizes 113 gallons or greater: UN3082, Environmentally Hazardous Substances, Liquid, N.O.S., 9, PGIII, RQ (2,4-D)
The following guidelines apply for domestic ground transport. If shipping by air or ocean, please contact our Transportation Dept.

PESTICIDES, NOI, INCLUDING DEFOLIANTS, FUNGICIDES, HERBICIDES, OR INSECTICIDES NMFC 155050-6

If shipped in bulk containers (greater than 119 gallons), this product is a Marine Pollutant.

When shipped as a Hazardous Material, label required is Class 9 (Miscellaneous). Placards required on bulk shipments only.

15. REGULATORY INFORMATION

U.S. EPA Label Information

EPA Pesticide Registration Number 2217-930

Federal Insecticide, Fungicide, Rodenticide Act Regulations

This chemical is a pesticide product registered by the Environmental Protection Agency and is subject to certain labeling requirements under federal pesticide law. These requirements differ from the classification criteria and hazard information required for safety data sheets, and for workplace labels of non-pesticide chemicals. Following is the hazard information as required on the pesticide label:

EPA Pesticide Label

Caution. Keep out of the reach of children. Causes moderate eye irritation. Avoid contact with eyes or clothing. Harmful if swallowed.

International Inventories

TSCA	Not Listed
DSL/NDSL	Not Listed
EINECS/ELINCS	Not Listed
ENCS	Not Listed
IECSC	Not Listed
KECL	Not Listed
PICCS	Not Listed
AICS	Not Listed

Legend:

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
 DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List
 EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances
 ENCS - Japan Existing and New Chemical Substances
 IECSC - China Inventory of Existing Chemical Substances
 KECL - Korean Existing and Evaluated Chemical Substances
 PICCS - Philippines Inventory of Chemicals and Chemical Substances
 AICS - Australian Inventory of Chemical Substances

Chemical Name	TSCA	DSL	NDSL	EINECS	ELINCS	ENCS	IECSC	KECL	PICCS	AICS
2,4-D, dimethylamine salt				X			X		X	X
8-Quinolincarboxylic acid, 3,7-dichloro-		X			X		X	X	X	X
Trade Secret	X	X		X		X	X	X	X	X
Dimethylamine dicamba				X		X				X

US Federal Regulations

SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product contains a chemical or chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372

Chemical Name	CAS No.	Weight-%	SARA 313 - Threshold Values %
Trade Secret -		0-10*	1.0
Dimethylamine dicamba - 2300-66-5	2300-66-5	1.49	1.0

SARA 311/312 Hazard Categories

Acute health hazard	Yes
Chronic Health Hazard	No
Fire hazard	No
Sudden release of pressure hazard	No
Reactive Hazard	No

CWA (Clean Water Act)

This product contains the following substances which are regulated pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42)

Chemical Name	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants	CWA - Hazardous Substances
Trade Secret	1000 lb			X

CERCLA

This material, as supplied, contains one or more substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302)

Chemical Name	Hazardous Substances RQs	CERCLA/SARA RQ	Reportable Quantity (RQ)
2,4-D, dimethylamine salt 2008-39-1	100 lb		RQ 100 lb final RQ RQ 45.4 kg final RQ
Trade Secret	1000 lb		RQ 1000 lb final RQ RQ 454 kg final RQ

US State Regulations

U.S. State Right-to-Know Regulations

Chemical Name	New Jersey	Massachusetts	Pennsylvania
Trade Secret	X	X	X
Dimethylamine dicamba 2300-66-5	X		

International Regulations

Mexico - Grade

Moderate risk, Grade 2

Chemical Name	Carcinogenicity	Exposure Limits
Trade Secret		Mexico: TWA 10 ppm Mexico: TWA 18 mg/m ³

16. OTHER INFORMATION

<u>NFPA</u>	Health hazards 2	Flammability 1	Instability 0	Physical and Chemical Properties -
<u>HMIS</u>	Health hazards 2	Flammability 1	Physical hazards 0	Personal protection X

Disclaimer

The information provided in this Material Safety Data Sheet is correct to the best of PBI Gordon Corporation's knowledge, information and belief at the date of this publication. The information given is designed only as guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any other process, unless specified in the text. PBI GORDON CORPORATION MAKES NO WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OR COURSE OF PERFORMANCE OR USAGE OF TRADE. Given the variety of factors that can affect the use and application of this product, some of which are uniquely within the user's knowledge and control, it is essential that the user evaluate the product to determine whether it is fit for a particular purpose and suitable for user's method of use or application. Each user is also responsible for evaluating the conditions of use and designing the appropriate protective mechanisms to prevent employee exposures, property damage, or release to the environment. PBI Gordon Corporation assumes no responsibility for injury to the recipient or third persons, or for any damage to any property resulting from misuse of the product.

End of Safety Data Sheet





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SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

Product identifier

Trade name RONSTAR® G HERBICIDE
Product code (UVP) 05950651
SDS Number 102000004005
EPA Registration No. 432-886

Relevant identified uses of the substance or mixture and uses advised against

Use Herbicide
Restrictions on use See product label for restrictions.

Information on manufacturer

Bayer Environmental Science
2 T.W. Alexander Drive
Research Triangle PK, NC 27709
United States

Emergency Telephone Number (24hr/ 7 days) 1-800-334-7577 (24 hours/day)

Product Information Telephone Number 1-800-331-2867

SDS Information or Request SDSINFO.BCS-NA@bayer.com

SECTION 2: HAZARDS IDENTIFICATION

Classification in accordance with regulation HCS 29CFR §1910.1200

Eye irritation : Category 2B

Signal word: Warning

Hazard statements

Causes eye irritation.

Precautionary statements

Wash thoroughly after handling.

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

If eye irritation persists: Get medical advice/attention.

Other hazards

No other hazards known.



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SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Hazardous Component Name	CAS-No.	Average % by Weight
Oxadiazon	19666-30-9	2.00
Titanium dioxide	13463-67-7	0.92
Naphthalene	91-20-3	0.42

SECTION 4: FIRST AID MEASURES

Description of first aid measures

General advice	When possible, have the product container or label with you when calling a poison control center or doctor or going for treatment.
Inhalation	Move to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth if possible. Call a physician or poison control center immediately.
Skin contact	Take off contaminated clothing and shoes immediately. Wash off immediately with plenty of water for at least 15 minutes. Call a physician or poison control center immediately.
Eye contact	Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Call a physician or poison control center immediately.
Ingestion	Call a physician or poison control center immediately. Rinse out mouth and give water in small sips to drink. DO NOT induce vomiting unless directed to do so by a physician or poison control center. Never give anything by mouth to an unconscious person. Do not leave victim unattended.

Most important symptoms and effects, both acute and delayed

Symptoms	To date no symptoms are known.
Indication of any immediate medical attention and special treatment needed	
Risks	Consideration should be given to the possibility that overexposure to materials other than this product may have occurred.
Treatment	Appropriate supportive and symptomatic treatment as indicated by the patient's condition is recommended. There is no specific antidote.

SECTION 5: FIREFIGHTING MEASURES

Extinguishing media

Suitable	Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.
Unsuitable	None known.



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Special hazards arising from the substance or mixture	Dangerous gases are evolved in the event of a fire.
Advice for firefighters	
Special protective equipment for fire-fighters	Firefighters should wear NIOSH approved self-contained breathing apparatus and full protective clothing.
Further information	Use appropriate extinguishing media for material that is supplying fuel. Keep out of smoke. Fight fire from upwind position. Cool closed containers exposed to fire with water spray. Do not allow run-off from fire fighting to enter drains or water courses.
Flash point	not applicable
Autoignition temperature	no data available
Lower explosion limit	not applicable
Upper explosion limit	not applicable
Explosivity	no data available

SECTION 6: ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Precautions Keep unauthorized people away. Isolate hazard area. Avoid contact with spilled product or contaminated surfaces.

Methods and materials for containment and cleaning up

Methods for cleaning up Sweep up or vacuum up spillage and collect in suitable container for disposal. Clean contaminated floors and objects thoroughly, observing environmental regulations. Decontaminate tools and equipment following cleanup.

Additional advice Use personal protective equipment. Do not allow to enter soil, waterways or waste water canal. Do not allow product to contact non-target plants.

Reference to other sections Information regarding safe handling, see section 7.
Information regarding personal protective equipment, see section 8.
Information regarding waste disposal, see section 13.

SECTION 7: HANDLING AND STORAGE

Precautions for safe handling

Advice on safe handling Maintain exposure levels below the exposure limit through the use of general and local exhaust ventilation. Handle and open container in a manner as to prevent spillage.

Advice on protection Take measures to prevent the build up of electrostatic charge.



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against fire and explosion

Hygiene measures

Keep away from food, drink and animal feedingstuffs.
Wash hands thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco, using the toilet or applying cosmetics.
Remove Personal Protective Equipment (PPE) immediately after handling this product. Before removing gloves clean them with soap and water. Remove soiled clothing immediately and clean thoroughly before using again. Wash thoroughly and put on clean clothing.

Conditions for safe storage, including any incompatibilities

Requirements for storage areas and containers

Store in a cool, dry place and in such a manner as to prevent cross contamination with other crop protection products, fertilizers, food, and feed. Store in original container and out of the reach of children, preferably in a locked storage area.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Components	CAS-No.	Control parameters	Update	Basis
Naphthalene	91-20-3	10 ppm (TWA)		OES BCS*
Naphthalene	91-20-3	10 ppm (TWA)	02 2012	ACGIH
Naphthalene	91-20-3	15 ppm (STEL)	02 2012	ACGIH
Naphthalene	91-20-3	10 ppm (TWA)	02 2013	ACGIH NIC
Naphthalene	91-20-3	50 mg/m3/10 ppm (REL)	2010	NIOSH
Naphthalene	91-20-3	75 mg/m3/15 ppm (STEL)	2010	NIOSH
Naphthalene	91-20-3	50 mg/m3/10 ppm (PEL)	02 2006	OSHA Z1
Naphthalene	91-20-3	75 mg/m3/15 ppm (STEL)	1989	OSHA Z1A
Naphthalene	91-20-3	50 mg/m3/10 ppm (TWA)	1989	OSHA Z1A
Naphthalene	91-20-3	75 mg/m3/15 ppm (STEL)	06 2008	TN OEL
Naphthalene	91-20-3	50 mg/m3/10 ppm (TWA)	06 2008	TN OEL
Naphthalene	91-20-3	10ppb (AN ESL)	07 2011	TX ESL
Naphthalene	91-20-3	38ppb (ST ESL)	02 2013	TX ESL
Naphthalene	91-20-3	50ug/m3 (AN ESL)	07 2011	TX ESL

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Naphthalene	91-20-3	200ug/m3 (ST ESL)	02 2013	TX ESL
Naphthalene	91-20-3	75 mg/m3/15 ppm (STEL)	08 2010	US CA OEL
Naphthalene	91-20-3	50 mg/m3/10 ppm (TWA PEL)	08 2010	US CA OEL
Cellulose	9004-34-6	10 mg/m3 (TWA)	02 2012	ACGIH
Cellulose (Total)	9004-34-6	10 mg/m3 (REL)	2010	NIOSH
Cellulose (Respirable.)	9004-34-6	5 mg/m3 (REL)	2010	NIOSH
Cellulose (Total dust.)	9004-34-6	15 mg/m3 (PEL)	02 2006	OSHA Z1
Cellulose (Respirable fraction.)	9004-34-6	5 mg/m3 (PEL)	02 2006	OSHA Z1
Cellulose (Total dust.)	9004-34-6	15 mg/m3 (TWA)	1989	OSHA Z1A
Cellulose (Respirable fraction.)	9004-34-6	5 mg/m3 (TWA)	1989	OSHA Z1A
Cellulose (Respirable fraction.)	9004-34-6	5 mg/m3 (TWA)	06 2008	TN OEL
Cellulose (Total dust.)	9004-34-6	15 mg/m3 (TWA)	06 2008	TN OEL
Cellulose (Particulate.)	9004-34-6	50ug/m3 (ST ESL)	02 2013	TX ESL
Cellulose (Particulate.)	9004-34-6	5ug/m3 (AN ESL)	02 2013	TX ESL
Kaolin (Respirable fraction.)	1332-58-7	2 mg/m3 (TWA)	02 2012	ACGIH
Kaolin (Total)	1332-58-7	10 mg/m3 (REL)	2010	NIOSH
Kaolin (Respirable.)	1332-58-7	5 mg/m3 (REL)	2010	NIOSH
Kaolin (Total dust.)	1332-58-7	15 mg/m3 (PEL)	02 2006	OSHA Z1
Kaolin (Respirable fraction.)	1332-58-7	5 mg/m3 (PEL)	02 2006	OSHA Z1
Kaolin (Total dust.)	1332-58-7	10 mg/m3 (TWA)	1989	OSHA Z1A
Kaolin (Respirable fraction.)	1332-58-7	5 mg/m3 (TWA)	1989	OSHA Z1A
Kaolin (Total dust.)	1332-58-7	10 mg/m3 (TWA)	06 2008	TN OEL
Kaolin (Respirable fraction.)	1332-58-7	5 mg/m3 (TWA)	06 2008	TN OEL
Kaolin (Particulate.)	1332-58-7	20ug/m3 (ST ESL)	02 2013	TX ESL
Kaolin	1332-58-7	2ug/m3	02 2013	TX ESL



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(Particulate.)		(AN ESL)		
Kaolin (Respirable dust.)	1332-58-7	2 mg/m3 (TWA PEL)	08 2010	US CA OEL
Calcium carbonate (Respirable.)	471-34-1	5 mg/m3 (REL)	2010	NIOSH
Calcium carbonate (Total)	471-34-1	10 mg/m3 (REL)	2010	NIOSH
Calcium carbonate	471-34-1	50ug/m3 (ST ESL)	07 2011	TX ESL
Calcium carbonate	471-34-1	5ug/m3 (AN ESL)	07 2011	TX ESL
Titanium dioxide	13463-67-7	10 mg/m3 (TWA)	02 2012	ACGIH
Titanium dioxide (Respirable fraction.)	13463-67-7	1 mg/m3 (TWA)	02 2013	ACGIH NIC
Titanium dioxide (Total dust.)	13463-67-7	15 mg/m3 (PEL)	02 2006	OSHA Z1
Titanium dioxide (Total dust.)	13463-67-7	10 mg/m3 (TWA)	1989	OSHA Z1A
Titanium dioxide (Total dust.)	13463-67-7	10 mg/m3 (TWA)	06 2008	TN OEL
Titanium dioxide (Respirable particles.)	13463-67-7	50ug/m3 (ST ESL)	02 2013	TX ESL
Titanium dioxide (Respirable particles.)	13463-67-7	5ug/m3 (AN ESL)	02 2013	TX ESL
Oxadiazon	19666-30-9	0.28 mg/m3 (TWA)		OES BCS*
Oxadiazon	19666-30-9	5ug/m3 (AN ESL)	07 2011	TX ESL
Oxadiazon	19666-30-9	50ug/m3 (ST ESL)	07 2011	TX ESL

*OES BCS: Internal Bayer CropScience "Occupational Exposure Standard"

Exposure controls

Personal protective equipment

In normal use and handling conditions please refer to the label and/or leaflet. In all other cases the following recommendations would apply.

Respiratory protection

When respirators are required, select NIOSH approved equipment based on actual or potential airborne concentrations and in accordance with the appropriate regulatory standards and/or industry recommendations.

Under conditions immediately dangerous to life or health, or emergency conditions with unknown concentrations, use a full-face positive pressure air-supplied respirator equipped with an emergency escape air supply unit or use a self-contained breathing apparatus unit.



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Hand protection	Chemical resistant nitrile rubber gloves
Eye protection	Tightly fitting safety goggles
Skin and body protection	Wear long-sleeved shirt and long pants and shoes plus socks.
General protective measures	Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables, use detergent and warm/tepid water. Keep and wash PPE separately from other laundry.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	grey to tan
Physical State	granular
Odor	slight
Odour Threshold	no data available
pH	no data available
Vapor Pressure	no data available
Vapor Density (Air = 1)	no data available
Bulk density	44.0 - 50.0 lb/ft ³ (loose)
Evaporation rate	no data available
Boiling Point	not applicable
Melting / Freezing Point	not applicable
Water solubility	insoluble
Minimum Ignition Energy	no data available
Decomposition temperature	no data available
Partition coefficient: n-octanol/water	no data available
Viscosity	not applicable
Flash point	not applicable
Autoignition temperature	no data available
Lower explosion limit	not applicable
Upper explosion limit	not applicable
Explosivity	no data available



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SECTION 10: STABILITY AND REACTIVITY

Reactivity

Thermal decomposition	no data available
Chemical stability	Stable under normal conditions.
Possibility of hazardous reactions	No hazardous reactions when stored and handled according to prescribed instructions.
Conditions to avoid	no data available
Incompatible materials	Strong bases, Strong acids, Strong oxidizing agents
Hazardous decomposition products	No decomposition products expected under normal conditions of use.

SECTION 11: TOXICOLOGICAL INFORMATION

Exposure routes	Inhalation, Eye contact, Skin contact, Ingestion
Immediate Effects	
Eye	Causes redness, irritation, tearing.
Skin	Causes irritation, redness, swelling.
Ingestion	Harmful if swallowed.
Inhalation	May cause upper respiratory tract irritation. Harmful if inhaled.

Information on toxicological effects

Acute oral toxicity	LD50 (rat) > 5,000 mg/kg
Acute inhalation toxicity	LC50 (rat) > 200 mg/l Exposure time: 1 h Determined in the form of dust.
Acute dermal toxicity	LD50 (rabbit) > 2,000 mg/kg
Skin irritation	Moderate skin irritation. (rabbit)
Eye irritation	Moderate eye irritation. (rabbit)
Sensitisation	Non-sensitizing. (guinea pig)

Assessment repeated dose toxicity

Oxadiazon caused specific target organ toxicity in experimental animal studies in the following organ(s): liver, blood. The observed effects do not appear to be relevant for humans.

Assessment Mutagenicity

Oxadiazon was not mutagenic or genotoxic based on the overall weight of evidence in a battery of in vitro and in vivo tests.

Assessment Carcinogenicity

Oxadiazon caused at high dose levels an increased incidence of tumours in the following organ(s):



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liver. The mechanism that triggers tumours in rodents and the type of tumours observed are not relevant to humans.

ACGIH

Titanium dioxide	13463-67-7	Group A4
Naphthalene	91-20-3	Group A4

NTP

Naphthalene	91-20-3
-------------	---------

IARC

Titanium dioxide	13463-67-7	Overall evaluation: 2B
Naphthalene	91-20-3	Overall evaluation: 2B

OSHA

None.

Assessment toxicity to reproduction

Oxadiazon caused reproduction toxicity in a two-generation study in rats only at dose levels also toxic to the parent animals. The reproduction toxicity seen with Oxadiazon is related to parental toxicity.

Assessment developmental toxicity

Oxadiazon caused developmental toxicity only at dose levels toxic to the dams. The developmental effects seen with Oxadiazon are related to maternal toxicity.

SECTION 12: ECOLOGICAL INFORMATION

Toxicity to fish	LC50 (Oncorhynchus mykiss (rainbow trout)) 1.2 mg/l Exposure time: 96 h The value mentioned relates to the active ingredient oxadiazon.
Toxicity to aquatic invertebrates	EC50 (Water flea (Daphnia magna)) > 2.4 mg/l Exposure time: 48 h The value mentioned relates to the active ingredient oxadiazon.
Toxicity to aquatic plants	EC50 (Skeletonema costatum) 0.0056 mg/l Exposure time: 120 h The value mentioned relates to the active ingredient oxadiazon.
Biodegradability	Oxadiazon: ; not rapidly biodegradable
Koc	Oxadiazon: Koc: 1294
Bioaccumulation	Oxadiazon: Bioconcentration factor (BCF) 243; Does not bioaccumulate.
Mobility in soil	Oxadiazon: Slightly mobile in soils
Environmental precautions	Do not allow to get into surface water, drains and ground water. Do not contaminate surface or ground water by cleaning equipment or disposal of wastes, including equipment wash water. Apply this product as specified on the label.



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SECTION 13: DISPOSAL CONSIDERATIONS

Waste treatment methods

Product	Pesticide, spray mixture or rinse water that cannot be used according to label instructions may be disposed of on site or at an approved waste disposal facility.
Contaminated packaging	Do not re-use empty containers. Completely empty container into application equipment, then dispose of empty container in a sanitary landfill, by incineration or by other procedures approved by state/provincial and local authorities. If burned, stay out of smoke.
RCRA Information	Characterization and proper disposal of this material as a special or hazardous waste is dependent upon Federal, State and local laws and are the user's responsibility. RCRA classification may apply.

SECTION 14: TRANSPORT INFORMATION

49CFR

UN number	3077
Class	9
Packaging group	III
Proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCES, SOLID, N.O.S. (NAPHTHALENE)
RQ	Reportable Quantity is reached with 23,809 lb of product.

IMDG

UN number	3077
Class	9
Packaging group	III
Marine pollutant	YES
Proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (OXADIAZON MIXTURE)

IATA

UN number	3077
Class	9
Packaging group	III
Environm. Hazardous Mark	YES
Proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (OXADIAZON MIXTURE)

This transportation information is not intended to convey all specific regulatory information relating to this product. It does not address regulatory variations due to package size or special transportation requirements.



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Freight Classification: COMPOUNDS, TREE OR WEEDKILLING, N.O.I., other than
poison; HAVING A DENSITY OF GREATER THAN 20 LBS.
PER CUBIC FOOT

SECTION 15: REGULATORY INFORMATION

EPA Registration No. 432-886

US Federal Regulations

TSCA list

Titanium dioxide 13463-67-7

Naphthalene 91-20-3

US. Toxic Substances Control Act (TSCA) Section 12(b) Export Notification (40 CFR 707, Subpt D)

None.

SARA Title III - Section 302 - Notification and Information

None.

SARA Title III - Section 313 - Toxic Chemical Release Reporting

Oxadiazon 19666-30-9 25,000lbs

Naphthalene 91-20-3 0.1%

US States Regulatory Reporting

CA Prop65

This product contains a chemical known to the State of California to cause cancer.

Oxadiazon 19666-30-9

Titanium dioxide 13463-67-7

Naphthalene 91-20-3

This product contains a chemical known to the State of California to cause birth defects or other reproductive harm.

Oxadiazon 19666-30-9 Developmental toxin.

US State Right-To-Know Ingredients

Oxadiazon 19666-30-9 NJ

Titanium dioxide 13463-67-7 MN

Naphthalene 91-20-3 CA, CT, MN, NJ

Canadian Regulations

Canadian Domestic Substance List

Titanium dioxide 13463-67-7

Naphthalene 91-20-3

Environmental

CERCLA

Naphthalene 91-20-3 100 lbs

Clean Water Section 307 Priority Pollutants

None.

Safe Drinking Water Act Maximum Contaminant Levels

None.

International Regulations

European Inventory of Existing Commercial Substances (EINECS)

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Oxadiazon 19666-30-9
Titanium dioxide 13463-67-7
Naphthalene 91-20-3

EPA/FIFRA Information:

This chemical is a pesticide product registered by the Environmental Protection Agency and is subject to certain labeling requirements under federal pesticide law. These requirements differ from the classification criteria and hazard information required for safety data sheets, and for workplace labels of non-pesticide chemicals. Following is the hazard information required on the pesticide label:

Signal word: Warning!

Hazard statements: Causes eye irritation.
Causes skin irritation.
Harmful if inhaled.
Do not get in eyes, on skin, or on clothing.
Avoid breathing dust.
Wash thoroughly with soap and water after handling.

SECTION 16: OTHER INFORMATION

NFPA 704 (National Fire Protection Association):

Health - 2 Flammability - 1 Instability - 0 Others - none

HMIS (Hazardous Materials Identification System, based on the Third Edition Ratings Guide)

Health - 2 Flammability - 1 Physical Hazard - 0 PPE -

0 = minimal hazard, 1 = slight hazard, 2 = moderate hazard, 3 = severe hazard, 4 = extreme hazard

Reason for Revision: Revised according to the current OSHA Hazard Communication Standard (29CFR1910.1200)

Revision Date: 03/10/2014

This information is provided in good faith but without express or implied warranty. The customer assumes all responsibility for safety and use not in accordance with label instructions. The product names are registered trademarks of Bayer.

MONSANTO COMPANY
Safety Data Sheet
Commercial Product

1. PRODUCT AND COMPANY IDENTIFICATION

Product name

Roundup PROMAX[™] Herbicide

EPA Reg. No.

524-579

Chemical name

Not applicable.

Synonyms

None.

Company

MONSANTO COMPANY, 800 N. Lindbergh Blvd., St. Louis, MO, 63167

Telephone: 800-332-3111, **Fax:** 314-694-5557

E-mail: TS-SAFETYDATASHEET@DOMINO.MONSANTO.COM

Emergency numbers

FOR CHEMICAL EMERGENCY, SPILL LEAK, FIRE, EXPOSURE, OR ACCIDENT Call CHEMTREC - Day or Night: 1-800-424-9300 toll free in the continental U.S., Puerto Rico, Canada, or Virgin Islands. For calls originating elsewhere: 703-527-3887 (collect calls accepted).

FOR MEDICAL EMERGENCY - Day or Night: +1 (314) 694-4000 (collect calls accepted).

2. HAZARDS IDENTIFICATION

Emergency overview

Appearance and odour (colour/form/odour): Amber - Yellow / Liquid / Soapy

CAUTION!

CAUSES MODERATE EYE IRRITATION

Potential health effects

Likely routes of exposure

Skin contact, eye contact

Eye contact, short term

May cause temporary eye irritation.

Skin contact, short term

Not expected to produce significant adverse effects when recommended use instructions are followed.

Inhalation, short term

Not expected to produce significant adverse effects when recommended use instructions are followed.

Refer to section 11 for toxicological and section 12 for environmental information.

OSHA Status

This product is hazardous according to the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Active ingredient

Potassium salt of N-(phosphonomethyl)glycine; {Potassium salt of glyphosate}

Composition

COMPONENT	CAS No.	% by weight (approximate)
Potassium salt of glyphosate	70901-12-1	48.7
Other ingredients		51.3

The specific chemical identity is being withheld because it is trade secret information of Monsanto Company.

4. FIRST AID MEASURES

Use personal protection recommended in section 8.

Eye contact

If in eyes, hold eye open and rinse slowly and gently for 15-20 minutes. Remove contact lenses, if present, after first 5 minutes, then continue rinsing.

Skin contact

Take off contaminated clothing, wristwatch, jewellery.
Wash affected skin with plenty of water.
Continue for at least 15 minutes.

Inhalation

Remove to fresh air.

Ingestion

Immediately offer water to drink.
Do NOT induce vomiting unless directed by medical personnel.
If symptoms occur, get medical attention.

Advice to doctors

This product is not an inhibitor of cholinesterase.

Antidote

Treatment with atropine and oximes is not indicated.

5. FIRE-FIGHTING MEASURES

Flash point

Does not flash.

Extinguishing media

Recommended: Water, foam, dry chemical, carbon dioxide (CO₂)

Unusual fire and explosion hazards

Minimise use of water to prevent environmental contamination.
Environmental precautions: see section 6.

Hazardous products of combustion

Carbon monoxide (CO), phosphorus oxides (P_xO_y), nitrogen oxides (NO_x)

Fire fighting equipment

Self-contained breathing apparatus.
Equipment should be thoroughly decontaminated after use.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions

Use personal protection recommended in section 8.

Environmental precautions

Minimise spread.
Contain spillage with sand bags or other means.
Keep out of drains, sewers, ditches and water ways.

Methods for cleaning up

SMALL QUANTITIES:
Flush spill area with water.
LARGE QUANTITIES:
Absorb in earth, sand or absorbent material.
Dig up heavily contaminated soil.
Collect in containers for disposal.
Refer to section 7 for types of containers.
Flush residues with small quantities of water.
Minimise use of water to prevent environmental contamination.

Refer to section 13 for disposal of spilled material.
Use handling recommendations in Section 7 and personal protection recommendations in Section 8.

7. HANDLING AND STORAGE

Good industrial practice in housekeeping and personal hygiene should be followed.

Handling

Avoid contact with eyes, skin and clothing.
When using do not eat, drink or smoke.
Wash hands thoroughly after handling or contact.
Do not contaminate drains, sewers and water ways when disposing of equipment rinse water.
Thoroughly clean equipment after use.
Refer to section 13 of the safety data sheet for disposal of rinse water.
Wash contaminated clothing before re-use.
Emptied containers retain vapour and product residue.
FOLLOW LABELLED WARNINGS EVEN AFTER CONTAINER IS EMPTIED.

Storage

Compatible materials for storage: stainless steel, fibreglass, plastic, glass lining
Incompatible materials for storage: galvanised steel, unlined mild steel, see section 10.
Keep out of reach of children.
Keep away from food, drink and animal feed.
Keep only in the original container.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Airborne exposure limits

Components	Exposure Guidelines
Potassium salt of glyphosate	No specific occupational exposure limit has been established.
Other ingredients	No specific occupational exposure limit has been established.

Engineering controls

No special requirement when used as recommended.

Eye protection

If there is significant potential for contact:

Wear chemical goggles.

Skin protection

Wear chemical resistant gloves.

If there is significant potential for contact:

Wear face shield.

Wear chemical resistant clothing/footwear.

Applicators and other handlers must wear:

Wear long sleeved shirt, long pants and shoes with socks.

Follow manufacturer's instructions for cleaning/maintaining Personal Protective Equipment.

If no such instructions for washables, use detergent and hot water.

Respiratory protection

No special requirement when used as recommended.

When recommended, consult manufacturer of personal protective equipment for the appropriate type of equipment for a given application.

9. PHYSICAL AND CHEMICAL PROPERTIES

These physical data are typical values based on material tested but may vary from sample to sample. Typical values should not be construed as a guaranteed analysis of any specific lot or as specifications for the product.

Colour/colour range:	Amber - Yellow
Odour:	Soapy
Form:	Liquid
Physical form changes (melting, boiling, etc.):	
Melting point:	200 °C
Boiling point:	Not available.
Flash point:	Does not flash.
Explosive properties:	No explosive properties
Auto ignition temperature:	No data.
Specific gravity:	1.356
Vapour pressure:	< 0.000001 mmHg @ 25 °C
Vapour density:	Not applicable.
Evaporation rate:	No data.
Dynamic viscosity:	Not available.
Kinematic viscosity:	Not available.
Density:	Not available.
Solubility:	Water: Completely miscible.
pH:	4.7
Partition coefficient:	log Pow: -3.2 @ 25 °C (glyphosate)

10. STABILITY AND REACTIVITY

Stability

Stable under normal conditions of handling and storage.

Oxidizing properties

No data.

Materials to avoid/Reactivity

Reacts with galvanised steel or unlined mild steel to produce hydrogen, a highly flammable gas that could explode.

Hazardous decomposition

Thermal decomposition: Hazardous products of combustion: see section 5.

Self-accelerating decomposition temperature (SADT)

No data.

11. TOXICOLOGICAL INFORMATION

This section is intended for use by toxicologists and other health professionals.

Data obtained on similar products and on components are summarized below.

Similar formulation

Skin irritation

Rabbit, 3 animals, OECD 404 test:

Days to heal: 7

Primary Irritation Index (PII): 1.9/8.0

Slight irritation.

FIFRA category IV.

Eye irritation

Rabbit, 3 animals, OECD 405 test:

Days to heal: 10

Moderate irritation.

FIFRA category III.

Similar formulation

Acute oral toxicity

Rat, LD50: > 5,000 mg/kg body weight

Practically non-toxic.

FIFRA category IV.

Acute dermal toxicity

Rat, LD50: > 5,000 mg/kg body weight

Practically non-toxic.

FIFRA category IV.

Acute inhalation toxicity

Rat, LC50, 4 hours, aerosol:

Practically non-toxic.

FIFRA category IV.

No 4-hr LC50 at the maximum tested concentration. For purposes of the inhalation test, product was artificially aerosolized. Since this material will not become aerosolized to a hazardous concentration during transport, it is classified as non-hazardous under the transportation regulations in accordance with 2.6.2.2.4.7(b) and (c) of the UN Recommendations on the Transport of Dangerous Goods.

Skin sensitization

Guinea pig, 3-induction Buehler test:

Positive incidence: 0 %

N-(phosphonomethyl)glycine: {glyphosate}

Mutagenicity

In vitro and in vivo mutagenicity test(s):

Not mutagenic.

Repeated dose toxicity

Rabbit, dermal, 21 days:

NOAEL toxicity: > 5,000 mg/kg body weight/day

Target organs/systems: none

Other effects: none

Rat, oral, 3 months:

NOAEL toxicity: > 20,000 mg/kg diet

Target organs/systems: none

Other effects: none

Chronic effects/carcinogenicity

Mouse, oral, 24 months:

NOAEL toxicity: ~ 5,000 mg/kg diet

Target organs/systems: liver

Other effects: decrease of body weight gain, histopathologic effects

NOEL tumour: > 30,000 mg/kg diet

Tumours: none

Rat, oral, 24 months:

NOAEL toxicity: ~ 8,000 mg/kg diet

Target organs/systems: eyes

Other effects: decrease of body weight gain, histopathologic effects

NOEL tumour: > 20,000 mg/kg diet

Tumours: none

Toxicity to reproduction/fertility

Rat, oral, 2 generations:

NOAEL toxicity: 10,000 mg/kg diet

NOAEL reproduction: > 30,000 mg/kg diet

Target organs/systems in parents: none

Other effects in parents: decrease of body weight gain

Target organs/systems in pups: none

Other effects in pups: decrease of body weight gain

Effects on offspring only observed with maternal toxicity.

Developmental toxicity/teratogenicity

Rat, oral, 6 - 19 days of gestation:

NOAEL toxicity: 1,000 mg/kg body weight

NOAEL development: 1,000 mg/kg body weight

Other effects in mother animal: decrease of body weight gain, decrease of survival

Developmental effects: weight loss, post-implantation loss, delayed ossification

Effects on offspring only observed with maternal toxicity.

Rabbit, oral, 6 - 27 days of gestation:

NOAEL toxicity: 175 mg/kg body weight

NOAEL development: 175 mg/kg body weight

Target organs/systems in mother animal: none

Other effects in mother animal: decrease of survival

Developmental effects: none

12. ECOLOGICAL INFORMATION

This section is intended for use by ecotoxicologists and other environmental specialists.

Data obtained on similar products and on components are summarized below.

Similar formulation

Aquatic toxicity, fish

Bluegill sunfish (*Lepomis macrochirus*):

Acute toxicity, 96 hours, static, LC50: 5.2 mg/L

Moderately toxic.

Common carp (*Cyprinus carpio*):

Acute toxicity, 96 hours, static, LC50: 4.0 mg/L

Moderately toxic.

Aquatic toxicity, invertebrates

Water flea (*Daphnia magna*):

Acute toxicity, 48 hours, static, EC50: 8.0 mg/L
Moderately toxic.

Similar formulation

Aquatic toxicity, algae/aquatic plants

Green algae (*Selenastrum capricornutum*):

Acute toxicity, 72 hours, static, EC50: 0.46 mg/L
Highly toxic.

Avian toxicity

Bobwhite quail (*Colinus virginianus*):

Acute oral toxicity, single dose, LD50: > 2,250 mg/kg body weight
Practically non-toxic.

Soil organism toxicity, invertebrates

Earthworm (*Eisenia foetida*):

Acute toxicity, 14 days, LC50: > 10,000 mg/kg dry soil
Practically non-toxic.

Soil organism toxicity, microorganisms

Nitrogen and carbon transformation test:

29.5 kg/ha, 28 days: Less than 25% effect on nitrogen or carbon transformation processes in soil.

Similar formulation

Arthropod toxicity

Honey bee (*Apis mellifera*):

Oral, 48 hours, LD50: > 242 µg/bee
Practically non-toxic.

Honey bee (*Apis mellifera*):

Contact, 48 hours, LD50: > 260 µg/bee
Practically non-toxic.

N-(phosphonomethyl)glycine; {glyphosate}

Avian toxicity

Bobwhite quail (*Colinus virginianus*):

Dietary toxicity, 5 days, LC50: > 4,640 mg/kg diet
No more than slightly toxic.

Mallard duck (*Anas platyrhynchos*):

Dietary toxicity, 5 days, LC50: > 4,640 mg/kg diet
No more than slightly toxic.

Bobwhite quail (*Colinus virginianus*):

Acute oral toxicity, single dose, LD50: > 3,851 mg/kg body weight
Practically non-toxic.

Bioaccumulation

Bluegill sunfish (*Lepomis macrochirus*):

Whole fish: BCF: < 1
No significant bioaccumulation is expected.

Dissipation

Soil, field:

Half life: 2 - 174 days
Koc: 884 - 60,000 L/kg
Adsorbs strongly to soil.

Water, aerobic:

Half life: < 7 days

13. DISPOSAL CONSIDERATIONS

Product

- Keep out of drains, sewers, ditches and water ways.
- Recycle if appropriate facilities/equipment available.
- Burn in proper incinerator.
- Follow all local/regional/national/international regulations.

Container

- See the individual container label for disposal information.
- Emptied containers retain vapour and product residue.
- Observe all labelled safeguards until container is cleaned, reconditioned or destroyed.
- Empty packaging completely.
- Triple or pressure rinse empty containers.
- Do NOT contaminate water when disposing of rinse waters.
- Ensure packaging cannot be reused.
- Do NOT re-use containers.
- Store for collection by approved waste disposal service.
- Recycle if appropriate facilities/equipment available.
- Follow all local/regional/national/international regulations.

Use handling recommendations in Section 7 and personal protection recommendations in Section 8.

14. TRANSPORT INFORMATION

The data provided in this section is for information only. Please apply the appropriate regulations to properly classify your shipment for transportation.

This product is not hazardous under the applicable DOT, ICAO/IATA, or IMDG regulations.

15. REGULATORY INFORMATION

TSCA Inventory

Exempt

OSHA Hazardous Components

Surfactant(s)

SARA Title III Rules

- Section 311/312 Hazard Categories
 - Immediate
- Section 302 Extremely Hazardous Substances
 - Not applicable.
- Section 313 Toxic Chemical(s)
 - Not applicable.

CERCLA Reportable quantity

Not applicable.

16. OTHER INFORMATION

The information given here is not necessarily exhaustive but is representative of relevant, reliable data. Follow all local/regional/national/international regulations. Please consult supplier if further information is needed.

In this document the British spelling was applied.

|| Significant changes versus previous edition.

Full denomination of most frequently used acronyms. BCF (Bioconcentration Factor), BOD (Biochemical Oxygen Demand), COD (Chemical Oxygen Demand), EC50 (50% effect concentration), ED50 (50% effect dose), I.M. (intramuscular), I.P. (intraperitoneal), I.V. (intravenous), Koc (Soil adsorption coefficient), LC50 (50% lethality concentration), LD50 (50% lethality dose), LDLo (Lower limit of lethal dosage), LEL (Lower Explosion Limit), LOAEC (Lowest Observed Adverse Effect Concentration), LOAEL (Lowest Observed Adverse Effect Level), LOEC (Lowest Observed Effect Concentration), LOEL (Lowest Observed Effect Level), MEL (Maximum Exposure limit), MTD (Maximum Tolerated Dose), NOAEC (No Observed Adverse Effect Concentration), NOAEL (No Observed Adverse Effect Level), NOEC (No Observed Effect Concentration), NOEL (No Observed Effect Level), OEL (Occupational Exposure Limit), PEL (Permissible Exposure Limit), PII (Primary Irritation Index), Pow (Partition coefficient n-octanol/water), S.C. (subcutaneous), STEL (Short-Term Exposure Limit), TLV-C (Threshold Limit Value-Ceiling), TLV-TWA (Threshold Limit Value - Time Weighted Average), UEL (Upper Explosion Limit)

This Material Safety Data Sheet (MSDS) serves different purposes than and DOES NOT REPLACE OR MODIFY THE EPA-APPROVED PRODUCT LABELING (attached to and accompanying the product container). This MSDS provides important health, safety, and environmental information for employers, employees, emergency responders and others handling large quantities of the product in activities generally other than product use, while the labeling provides that information specifically for product use in the ordinary course. Use, storage and disposal of pesticide products are regulated by the EPA under the authority of the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) through the product labeling, and all necessary and appropriate precautionary, use, storage, and disposal information is set forth on that labeling. It is a violation of federal law to use a pesticide product in any manner not prescribed on the EPA-approved label.

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SAFETY DATA SHEET

DOW AGROSCIENCES LLC

Product name: SNAPSHOT™ 2.5 TG HERBICIDE

Issue Date: 05/15/2015

Print Date: 05/26/2015

DOW AGROSCIENCES LLC encourages and expects you to read and understand the entire (M)SDS, as there is important information throughout the document. We expect you to follow the precautions identified in this document unless your use conditions would necessitate other appropriate methods or actions.

1. IDENTIFICATION

Product name: SNAPSHOT™ 2.5 TG HERBICIDE

Recommended use of the chemical and restrictions on use

Identified uses: End use herbicide product

COMPANY IDENTIFICATION

DOW AGROSCIENCES LLC
9330 ZIONSVILLE RD
INDIANAPOLIS IN 46268-1053
UNITED STATES

Customer Information Number:

800-992-5994
info@dow.com

EMERGENCY TELEPHONE NUMBER

24-Hour Emergency Contact: 800-992-5994

Local Emergency Contact: 352-323-3500

2. HAZARDS IDENTIFICATION

Hazard classification

This material is hazardous under the criteria of the Federal OSHA Hazard Communication Standard 29CFR 1910.1200.

Acute toxicity - Category 3 - Inhalation

Carcinogenicity - Category 1A

Specific target organ toxicity - repeated exposure - Category 1

Label elements

Hazard pictograms



Signal word: **DANGER!**

Hazards

Toxic if inhaled.

May cause cancer.

Causes damage to organs through prolonged or repeated exposure.

Precautionary statements**Prevention**

Obtain special instructions before use.

Do not handle until all safety precautions have been read and understood.

Do not breathe dust/ fume/ gas/ mist/ vapours/ spray.

Wash skin thoroughly after handling.

Do not eat, drink or smoke when using this product.

Use only outdoors or in a well-ventilated area.

Use personal protective equipment as required.

Response

IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or doctor/ physician.

IF exposed or concerned: Get medical advice/ attention.

Storage

Store in a well-ventilated place. Keep container tightly closed.

Store locked up.

Disposal

Dispose of contents/ container to an approved waste disposal plant.

Other hazards

no data available

3. COMPOSITION/INFORMATION ON INGREDIENTS

This product is a mixture.

Component	CASRN	Concentration
Isoxaben	82558-50-7	0.5%
Trifluralin	1582-09-8	2.0%
Clays, Fuller's earth	8031-18-3	>= 78.5 - <= 86.4 %
Silica, crystalline (quartz)	14808-60-7	>= 0.9 - <= 8.7 %
Balance	Not available	>= 2.4 - <= 18.1 %

4. FIRST AID MEASURES

Description of first aid measures

General advice: First Aid responders should pay attention to self-protection and use the recommended protective clothing (chemical resistant gloves, splash protection). If potential for exposure exists refer to Section 8 for specific personal protective equipment.

Inhalation: Move person to fresh air. If person is not breathing, call an emergency responder or ambulance, then give artificial respiration; if by mouth to mouth use rescuer protection (pocket mask etc). Call a poison control center or doctor for treatment advice. If breathing is difficult, oxygen should be administered by qualified personnel.

Skin contact: Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call a poison control center or doctor for treatment advice.

Eye contact: Hold eyes open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eyes. Call a poison control center or doctor for treatment advice.

Ingestion: Call a poison control center or doctor immediately for treatment advice. Have person sip a glass of water if able to swallow. Do not induce vomiting unless told to do so by the poison control center or doctor. Never give anything by mouth to an unconscious person.

Most important symptoms and effects, both acute and delayed: Aside from the information found under Description of first aid measures (above) and Indication of immediate medical attention and special treatment needed (below), any additional important symptoms and effects are described in Section 11: Toxicology Information.

Indication of any immediate medical attention and special treatment needed

Notes to physician: No specific antidote. Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient. Have the Safety Data Sheet, and if available, the product container or label with you when calling a poison control center or doctor, or going for treatment.

5. FIREFIGHTING MEASURES

Suitable extinguishing media: This material does not burn. If exposed to fire from another source, use suitable extinguishing agent for that fire.

Unsuitable extinguishing media: no data available

Special hazards arising from the substance or mixture

Hazardous combustion products: Under fire conditions some components of this product may decompose. The smoke may contain unidentified toxic and/or irritating compounds. Combustion products may include and are not limited to: Nitrogen oxides. Hydrogen fluoride. Carbon monoxide. Carbon dioxide.

Unusual Fire and Explosion Hazards: None known.

Advice for firefighters

Fire Fighting Procedures: Keep people away. Isolate fire and deny unnecessary entry. Foam fire extinguishing system is preferred because uncontrolled water can spread possible contamination.

This material does not burn. Fight fire for other material that is burning. Contain fire water run-off if possible. Fire water run-off, if not contained, may cause environmental damage. Review the "Accidental Release Measures" and the "Ecological Information" sections of this (M)SDS.

Special protective equipment for firefighters: Wear positive-pressure self-contained breathing apparatus (SCBA) and protective fire fighting clothing (includes fire fighting helmet, coat, trousers, boots, and gloves). If protective equipment is not available or not used, fight fire from a protected location or safe distance.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures: Keep upwind of spill. Spilled material may cause a slipping hazard. Ventilate area of leak or spill. Use appropriate safety equipment. For additional information, refer to Section 8, Exposure Controls and Personal Protection.

Environmental precautions: Prevent from entering into soil, ditches, sewers, waterways and/or groundwater. See Section 12, Ecological Information.

Methods and materials for containment and cleaning up: Contain spilled material if possible. Small spills: Sweep up. Collect in suitable and properly labeled containers. Large spills: Contact Dow AgroSciences for clean-up assistance. See Section 13, Disposal Considerations, for additional information.

7. HANDLING AND STORAGE

Precautions for safe handling: Keep out of reach of children. Do not swallow. Avoid breathing dust or mist. Avoid contact with eyes, skin, and clothing. Use with adequate ventilation. Wash thoroughly after handling. Keep container closed. See Section 8, EXPOSURE CONTROLS AND PERSONAL PROTECTION.

Conditions for safe storage: Store in a dry place. Store in original container. Do not store near food, foodstuffs, drugs or potable water supplies.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Exposure limits are listed below, if they exist.

Component	Regulation	Type of listing	Value/Notation
Silica, crystalline (quartz)	OSHA Z-1		
	OSHA Z-3	TWA total dust	30 mg/m ³ / %SiO ₂ +2
	OSHA Z-3	TWA respirable	10 mg/m ³ / %SiO ₂ +2
	OSHA Z-3	TWA respirable	250 mppcf / %SiO ₂ +5
	ACGIH	TWA Respirable fraction	0.025 mg/m ³ , Silica fraction

RECOMMENDATIONS IN THIS SECTION ARE FOR MANUFACTURING, COMMERCIAL BLENDING AND PACKAGING WORKERS. APPLICATORS AND HANDLERS SHOULD SEE THE PRODUCT LABEL FOR PROPER PERSONAL PROTECTIVE EQUIPMENT AND CLOTHING.

Exposure controls

Engineering controls: Use engineering controls to maintain airborne level below exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, use only with adequate ventilation. Local exhaust ventilation may be necessary for some operations.

Individual protection measures

Eye/face protection: Use safety glasses (with side shields). If there is a potential for exposure to particles which could cause eye discomfort, wear chemical goggles.

Skin protection

Hand protection: Use gloves chemically resistant to this material when prolonged or frequently repeated contact could occur. Examples of preferred glove barrier materials include: Neoprene. Nitrile/butadiene rubber ("nitrile" or "NBR"). Polyvinyl chloride ("PVC" or "vinyl"). NOTICE: The selection of a specific glove for a particular application and duration of use in a workplace should also take into account all relevant workplace factors such as, but not limited to: Other chemicals which may be handled, physical requirements (cut/puncture protection, dexterity, thermal protection), potential body reactions to glove materials, as well as the instructions/specifications provided by the glove supplier.

Other protection: Wear clean, body-covering clothing.

Respiratory protection: Respiratory protection should be worn when there is a potential to exceed the exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, use an approved respirator. Selection of air-purifying or positive-pressure supplied-air will depend on the specific operation and the potential airborne concentration of the material. For emergency conditions, use an approved positive-pressure self-contained breathing apparatus. In confined or poorly ventilated areas, use an approved self-contained breathing apparatus or positive pressure air line with auxiliary self-contained air supply.

The following should be effective types of air-purifying respirators: Organic vapor cartridge with a particulate pre-filter.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance

Physical state	Granules.
Color	Yellow
Odor	Aromatic
Odor Threshold	No test data available
pH	7.5 (50% dispersion)
Melting point/range	No test data available
Freezing point	Not applicable
Boiling point (760 mmHg)	Not applicable
Flash point	closed cup Not applicable
Evaporation Rate (Butyl Acetate = 1)	Not applicable
Flammability (solid, gas)	No
Lower explosion limit	Not applicable
Upper explosion limit	Not applicable
Vapor Pressure	Not applicable
Relative Vapor Density (air = 1)	Not applicable
Relative Density (water = 1)	Not applicable

Water solubility	No test data available
Partition coefficient: n-octanol/water	no data available
Auto-ignition temperature	> 537 °C (> 999 °F)
Decomposition temperature	No test data available
Dynamic Viscosity	Not applicable
Kinematic Viscosity	Not applicable
Explosive properties	no data available
Oxidizing properties	no data available
Liquid Density	Not applicable
Bulk density	0.70 g/cm ³ <i>Loose Volumetric</i>
Molecular weight	No test data available

NOTE: The physical data presented above are typical values and should not be construed as a specification.

10. STABILITY AND REACTIVITY

Reactivity: no data available

Chemical stability: Stable under recommended storage conditions. See Storage, Section 7.

Possibility of hazardous reactions: Polymerization will not occur.

Conditions to avoid: Active ingredient decomposes at elevated temperatures. Avoid direct sunlight or ultraviolet sources.

Incompatible materials: Avoid contact with: Strong oxidizers. Strong acids.

Hazardous decomposition products: Decomposition products depend upon temperature, air supply and the presence of other materials. Decomposition products can include and are not limited to: Nitrogen oxides. Hydrogen fluoride.

11. TOXICOLOGICAL INFORMATION

Toxicological information appears in this section when such data is available.

Acute toxicity

Acute oral toxicity

Low toxicity if swallowed. Small amounts swallowed incidentally as a result of normal handling operations are not likely to cause injury; however, swallowing larger amounts may cause injury.

As product:
LD50, Rat, > 2,500 mg/kg

Acute dermal toxicity

Prolonged skin contact is unlikely to result in absorption of harmful amounts.

As product:
LD50, Rabbit, > 5,000 mg/kg

Acute inhalation toxicity

As product:
LC50, Rat, male, 4 Hour, Dust, > 4.6 mg/l
As product:
LC50, Rat, female, 4 Hour, Dust, > 0.5 - < 4.6 mg/l
Excessive exposure may cause irritation to upper respiratory tract (nose and throat).
Prolonged excessive exposure may cause serious adverse effects, even death.

Skin corrosion/irritation

Prolonged contact may cause slight skin irritation with local redness.

Serious eye damage/eye irritation

Solid or dust may cause irritation due to mechanical action.

Sensitization

Did not cause allergic skin reactions when tested in guinea pigs.
Did not demonstrate the potential for contact allergy in mice.

For respiratory sensitization:
No relevant information found.

Specific Target Organ Systemic Toxicity (Single Exposure)

Evaluation of available data suggests that this material is not an STOT-SE toxicant.

Specific Target Organ Systemic Toxicity (Repeated Exposure)

For the active ingredient(s):
In animals, effects have been reported on the following organs:
Kidney.
Liver.
Blood.
Repeated excessive exposure to crystalline silica may cause silicosis, a progressive and disabling disease of the lungs.

Carcinogenicity

Crystalline silica has been shown to cause cancer in laboratory animals and humans. An increase in nonmalignant liver tumors was observed with isoxaben in one of two species tested. A low incidence of urinary tract tumors was seen in only 1 of 5 chronic studies in rats with trifluralin. Trifluralin is not anticipated to be a carcinogenic risk to man.

Teratogenicity

For the active ingredient(s): Trifluralin. Has been toxic to the fetus in laboratory animals at doses toxic to the mother. Isoxaben. Has caused birth defects in laboratory animals only at doses toxic to the mother.

Reproductive toxicity

For the active ingredient(s): Isoxaben. In animal studies, has been shown to interfere with reproduction in females.

Mutagenicity

For the active ingredient(s): Trifluralin. In vitro genetic toxicity studies were negative in some cases and positive in other cases. Animal genetic toxicity studies were negative.

Based on information for component(s): Crystalline Silica. In vitro genetic toxicity studies were negative in some cases and positive in other cases.

Aspiration Hazard

Based on physical properties, not likely to be an aspiration hazard.

Carcinogenicity

Component	List	Classification
Silica, crystalline (quartz)	IARC ACGIH	Group 1: Carcinogenic to humans A2: Suspected human carcinogen

12. ECOLOGICAL INFORMATION

Ecotoxicological information appears in this section when such data is available.

Toxicity**Acute toxicity to fish**

LC50, Oncorhynchus mykiss (rainbow trout), semi-static test, 96 Hour, 230 mg/l

Material is practically non-toxic to aquatic organisms on an acute basis (LC50/EC50/EL50/LL50 >100 mg/L in the most sensitive species tested).

Acute toxicity to aquatic invertebrates

EC50, Daphnia pulex (Water flea), 48 Hour, > 1,000 mg/l

Acute toxicity to algae/aquatic plants

ErC50, Pseudokirchneriella subcapitata (green algae), 96 Hour, > 1,000 mg/l

Toxicity to Above Ground Organisms

Material is practically non-toxic to birds on an acute basis (LD50 > 2000 mg/kg).

oral LD50, Colinus virginianus (Bobwhite quail), > 2000mg/kg bodyweight.

Toxicity to soil-dwelling organisms

LC50, Eisenia fetida (earthworms), 14 d, survival, > 10,000 mg/kg

Persistence and degradability**Isoxaben**

Biodegradability: Material is expected to biodegrade very slowly (in the environment). Fails to pass OECD/EEC tests for ready biodegradability. Biodegradation rate may increase in soil and/or water with acclimation.

Theoretical Oxygen Demand: 1.98 mg/mg

Chemical Oxygen Demand: 1.77 mg/g

Stability in Water (1/2-life)

Hydrolysis, half-life, > 5 d, pH 7.0

Photodegradation

Test Type: Half-life (direct photolysis)

Method: Measured

Photodegradation

Test Type: Half-life (direct photolysis)

Photodegradation

Test Type: Half-life (indirect photolysis)

Sensitizer: OH radicals

Atmospheric half-life: 0.628 Hour

Method: Estimated.

Trifluralin

Biodegradability: Material is expected to biodegrade very slowly (in the environment). Fails to pass OECD/EEC tests for ready biodegradability.

10-day Window: Fail

Biodegradation: 5 %

Exposure time: 28 d

Method: OECD Test Guideline 301B or Equivalent

Chemical Oxygen Demand: 1.37 mg/mg

Stability in Water (1/2-life)

Hydrolysis, half-life, > 1 year, pH 3 - 9, Measured

Photolysis, half-life, 0.19 - 3.08 Hour, Measured

Photodegradation

Test Type: Half-life (indirect photolysis)

Sensitizer: OH radicals

Atmospheric half-life: 5.347 Hour

Method: Estimated.

Clays, Fuller's earth

Biodegradability: Biodegradation is not applicable.

Silica, crystalline (quartz)

Biodegradability: Biodegradation is not applicable.

Balance

Biodegradability: No relevant data found.

Bioaccumulative potential

Isoxaben

Bioaccumulation: Bioconcentration potential is low (BCF < 100 or Log Pow < 3).

Partition coefficient: n-octanol/water(log Pow): 2.64 Measured

Trifluralin

Bioaccumulation: Bioconcentration potential is high (BCF > 3000 or Log Pow between 5 and 7).

Partition coefficient: n-octanol/water(log Pow): 5.27

Bioconcentration factor (BCF): 1,060 - 6,000 Pimephales promelas (fathead minnow)
Estimated.

Clays, Fuller's earth

Bioaccumulation: Partitioning from water to n-octanol is not applicable.

Silica, crystalline (quartz)

Bioaccumulation: Partitioning from water to n-octanol is not applicable.

Balance

Bioaccumulation: No relevant data found.

Mobility in soil

Isoxaben

Potential for mobility in soil is low (Koc between 500 and 2000).

Partition coefficient(Koc): 700 - 1290

Clays, Fuller's earth

No relevant data found.

Silica, crystalline (quartz)

No relevant data found.

Balance

No relevant data found.

13. DISPOSAL CONSIDERATIONS

Disposal methods: If wastes and/or containers cannot be disposed of according to the product label directions, disposal of this material must be in accordance with your local or area regulatory authorities. This information presented below only applies to the material as supplied. The identification based on characteristic(s) or listing may not apply if the material has been used or otherwise contaminated. It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste identification and disposal methods in compliance with applicable regulations. If the material as supplied becomes a waste, follow all applicable regional, national and local laws.

14. TRANSPORT INFORMATION

DOT

Proper shipping name	Environmentally hazardous substance, solid, n.o.s.(Trifluralin)
UN number	UN 3077
Class	9
Packing group	III
Reportable Quantity	Trifluralin

Classification for SEA transport (IMO-IMDG):

Transport in bulk according to Annex I or II of MARPOL 73/78 and the IBC or IGC Code

Not regulated for transport
Consult IMO regulations before transporting ocean bulk

Classification for AIR transport (IATA/ICAO):

Not regulated for transport

This information is not intended to convey all specific regulatory or operational requirements/information relating to this product. Transportation classifications may vary by container volume and may be influenced by regional or country variations in regulations. Additional transportation system information can be obtained through an authorized sales or customer service representative. It is the responsibility of the transporting organization to follow all applicable laws, regulations and rules relating to the transportation of the material.

15. REGULATORY INFORMATION

OSHA Hazard Communication Standard

This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

Superfund Amendments and Reauthorization Act of 1986 Title III (Emergency Planning and Community Right-to-Know Act of 1986) Sections 311 and 312

Acute Health Hazard
Chronic Health Hazard

Superfund Amendments and Reauthorization Act of 1986 Title III (Emergency Planning and Community Right-to-Know Act of 1986) Section 313

This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

California Proposition 65 (Safe Drinking Water and Toxic Enforcement Act of 1986)

WARNING: This product contains a chemical(s) known to the State of California to cause cancer.

Pennsylvania (Worker and Community Right-To-Know Act): Pennsylvania Hazardous Substances List and/or Pennsylvania Environmental Hazardous Substance List:

The following product components are cited in the Pennsylvania Hazardous Substance List and/or the Pennsylvania Environmental Substance List, and are present at levels which require reporting.

Components	CASRN
Trifluralin	1582-09-8
Silica, crystalline (quartz)	14808-60-7

Pennsylvania (Worker and Community Right-To-Know Act): Pennsylvania Special Hazardous Substances List:

To the best of our knowledge, this product does not contain chemicals at levels which require reporting under this statute.

United States TSCA Inventory (TSCA)

This product contains chemical substance(s) exempt from U.S. EPA TSCA Inventory requirements. It is regulated as a pesticide subject to Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) requirements.

Federal Insecticide, Fungicide and Rodenticide Act

EPA Registration Number: 62719-175

This chemical is a pesticide product registered by the Environmental Protection Agency and is subject to certain labeling requirements under federal pesticide law. These requirements differ from the classification criteria and hazard information required for safety data sheets, and for workplace labels of non-pesticide chemicals. Following is the hazard information as required on the pesticide label:

CAUTION

Causes moderate eye irritation

Harmful if swallowed or inhaled

Prolonged or frequently repeated skin contact may cause allergic reactions in some individuals.

16. OTHER INFORMATION

Hazard Rating System**NFPA**

Health	Fire	Reactivity
2	1	0

Revision

Identification Number: 101204129 / A211 / Issue Date: 05/15/2015 / Version: 3.0

DAS Code: FN-3278

Most recent revision(s) are noted by the bold, double bars in left-hand margin throughout this document.

Legend

ACGIH	USA. ACGIH Threshold Limit Values (TLV)
OSHA Z-1	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
OSHA Z-3	USA. Occupational Exposure Limits (OSHA) - Table Z-3 Mineral Dusts
TWA	8-hour, time-weighted average

Information Source and References

This SDS is prepared by Product Regulatory Services and Hazard Communications Groups from information supplied by internal references within our company.

DOW AGROSCIENCES LLC urges each customer or recipient of this (M)SDS to study it carefully and consult appropriate expertise, as necessary or appropriate, to become aware of and understand the data contained in this (M)SDS and any hazards associated with the product. The information herein is

provided in good faith and believed to be accurate as of the effective date shown above. However, no warranty, express or implied, is given. Regulatory requirements are subject to change and may differ between various locations. It is the buyer's/user's responsibility to ensure that his activities comply with all federal, state, provincial or local laws. The information presented here pertains only to the product as shipped. Since conditions for use of the product are not under the control of the manufacturer, it is the buyer's/user's duty to determine the conditions necessary for the safe use of this product. Due to the proliferation of sources for information such as manufacturer-specific (M)SDSs, we are not and cannot be responsible for (M)SDSs obtained from any source other than ourselves. If you have obtained an (M)SDS from another source or if you are not sure that the (M)SDS you have is current, please contact us for the most current version.



SAFETY DATA SHEET

Product name: Turflon® Ester

Issue Date: 06/01/2015

Lawn and Garden Products, Inc. encourages and expects you to read and understand the entire (M)SDS, as there is important information throughout the document. We expect you to follow the precautions identified in this document unless your use conditions would necessitate other appropriate methods or actions.

1. IDENTIFICATION

Product name: Turflon® Ester

Recommended use of the chemical and restrictions on use

Identified uses: End use herbicide product

COMPANY IDENTIFICATION

Lawn and Garden Products, Inc.
PO Box 35000
Fresno, CA 93745

Customer Information Number:

559-499-2100
info@montereylawngarden.com

EMERGENCY TELEPHONE NUMBER

24-Hour Emergency Contact: CHEMTREC: 800-424-9300
EPA National Response Center: 800-424-8802

2. HAZARDS IDENTIFICATION

Hazard classification

This material is hazardous under the criteria of the Federal OSHA Hazard Communication Standard 29CFR 1910.1200.

Skin sensitisation - Sub-category 1B

Label elements

Hazard pictograms



Signal word: **WARNING!**

Hazards

May cause an allergic skin reaction.

Precautionary statements**Prevention**

Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.

Contaminated work clothing should not be allowed out of the workplace.

Wear protective gloves.

Response

IF ON SKIN: Wash with plenty of soap and water.

If skin irritation or rash occurs: Get medical advice/ attention.

Wash contaminated clothing before reuse.

Disposal

Dispose of contents/ container to an approved waste disposal plant.

Other hazards

no data available

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical nature: Mixture

This product is a mixture.

Component	CASRN	Concentration
Triclopyr-2-butoxyethyl ester	64700-56-7	60.5%
Ethylene glycol monobutyl ether	111-76-2	0.5%
Balance	Not available	39.0%

4. FIRST AID MEASURES

Description of first aid measures

General advice: First Aid responders should pay attention to self-protection and use the recommended protective clothing (chemical resistant gloves, splash protection). If potential for exposure exists refer to Section 8 for specific personal protective equipment.

Inhalation: Move person to fresh air. If person is not breathing, call an emergency responder or ambulance, then give artificial respiration; if by mouth to mouth use rescuer protection (pocket mask etc). Call a poison control center or doctor for treatment advice.

Skin contact: Take off contaminated clothing. Wash skin with soap and plenty of water for 15-20 minutes. Call a poison control center or doctor for treatment advice. Wash clothing before reuse. Shoes and other leather items which cannot be decontaminated should be disposed of properly.

Eye contact: Hold eyes open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eyes. Call a poison control center or doctor for treatment advice.

Ingestion: Call a poison control center or doctor immediately for treatment advice. Have person sip a glass of water if able to swallow. Do not induce vomiting unless told to do so by the poison control center or doctor. Never give anything by mouth to an unconscious person.

Most important symptoms and effects, both acute and delayed: Aside from the information found under Description of first aid measures (above) and Indication of immediate medical attention and special treatment needed (below), any additional important symptoms and effects are described in Section 11: Toxicology Information.

Indication of any immediate medical attention and special treatment needed

Notes to physician: No specific antidote. Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient. Have the Safety Data Sheet, and if available, the product container or label with you when calling a poison control center or doctor, or going for treatment.

5. FIREFIGHTING MEASURES

Suitable extinguishing media: Water fog or fine spray. Dry chemical fire extinguishers. Carbon dioxide fire extinguishers. Foam. Alcohol resistant foams (ATC type) are preferred. General purpose synthetic foams (including AFFF) or protein foams may function, but will be less effective. Water fog, applied gently may be used as a blanket for fire extinguishment.

Unsuitable extinguishing media: Do not use direct water stream. May spread fire.

Special hazards arising from the substance or mixture

Hazardous combustion products: During a fire, smoke may contain the original material in addition to combustion products of varying composition which may be toxic and/or irritating. Combustion products may include and are not limited to: Nitrogen oxides. Hydrogen chloride. Carbon monoxide. Carbon dioxide. Phosgene.

Unusual Fire and Explosion Hazards: Container may rupture from gas generation in a fire situation. Violent steam generation or eruption may occur upon application of direct water stream to hot liquids.

Advice for firefighters

Fire Fighting Procedures: Keep people away. Isolate fire and deny unnecessary entry. Use water spray to cool fire exposed containers and fire affected zone until fire is out and danger of reignition has passed. Fight fire from protected location or safe distance. Consider the use of unmanned hose holders or monitor nozzles. Immediately withdraw all personnel from the area in case of rising sound from venting safety device or discoloration of the container. Do not use direct water stream. May spread fire. Move container from fire area if this is possible without hazard. Burning liquids may be moved by flushing with water to protect personnel and minimize property damage. Water fog, applied gently may be used as a blanket for fire extinguishment. Contain fire water run-off if possible. Fire water run-off, if not contained, may cause environmental damage. Review the "Accidental Release Measures" and the "Ecological Information" sections of this (M)SDS.

Special protective equipment for firefighters: Wear positive-pressure self-contained breathing apparatus (SCBA) and protective fire fighting clothing (includes fire fighting helmet, coat, trousers, boots, and gloves). Avoid contact with this material during fire fighting operations. If contact is likely, change to full chemical resistant fire fighting clothing with self-contained breathing apparatus. If this is

not available, wear full chemical resistant clothing with self-contained breathing apparatus and fight fire from a remote location. For protective equipment in post-fire or non-fire clean-up situations, refer to the relevant sections.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures: Isolate area. Keep unnecessary and unprotected personnel from entering the area. Refer to section 7, Handling, for additional precautionary measures. Use appropriate safety equipment. For additional information, refer to Section 8, Exposure Controls and Personal Protection.

Environmental precautions: Prevent from entering into soil, ditches, sewers, waterways and/or groundwater. See Section 12, Ecological Information.

Methods and materials for containment and cleaning up: Contain spilled material if possible. Small spills: Absorb with materials such as: Clay. Dirt. Sand. Sweep up. Collect in suitable and properly labeled containers. Large spills: Contact Dow AgroSciences for clean-up assistance. See Section 13, Disposal Considerations, for additional information.

7. HANDLING AND STORAGE

Precautions for safe handling: Keep out of reach of children. Do not swallow. Avoid breathing vapor or mist. Avoid contact with eyes, skin, and clothing. Use with adequate ventilation. Wash thoroughly after handling. See Section 8, EXPOSURE CONTROLS AND PERSONAL PROTECTION.

Conditions for safe storage: Store in a dry place. Store in original container. Keep container tightly closed when not in use. Do not store near food, foodstuffs, drugs or potable water supplies.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Exposure limits are listed below, if they exist.

Component	Regulation	Type of listing	Value/Notation
Triclopyr-2-butoxyethyl ester	Dow IHG	TWA	2 mg/m ³
	Dow IHG	TWA	SKIN, DSEN, BEI
Ethylene glycol monobutyl ether	ACGIH	TWA	20 ppm
	OSHA Z-1	TWA	240 mg/m ³ 50 ppm
	ACGIH	TWA	BEI
	OSHA Z-1	TWA	Absorbed via skin

RECOMMENDATIONS IN THIS SECTION ARE FOR MANUFACTURING, COMMERCIAL BLENDING AND PACKAGING WORKERS. APPLICATORS AND HANDLERS SHOULD SEE THE PRODUCT LABEL FOR PROPER PERSONAL PROTECTIVE EQUIPMENT AND CLOTHING.

Exposure controls

Engineering controls: Use local exhaust ventilation, or other engineering controls to maintain airborne levels below exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, general ventilation should be sufficient for most operations.

Individual protection measures

Eye/face protection: Use safety glasses (with side shields).

Skin protection

Hand protection: Use gloves chemically resistant to this material. Examples of preferred glove barrier materials include: Butyl rubber. Chlorinated polyethylene. Neoprene. Polyethylene. Ethyl vinyl alcohol laminate ("EVAL"). Examples of acceptable glove barrier materials include: Natural rubber ("latex"). Viton. Polyvinyl chloride ("PVC" or "vinyl"). Nitrile/butadiene rubber ("nitrile" or "NBR"). NOTICE: The selection of a specific glove for a particular application and duration of use in a workplace should also take into account all relevant workplace factors such as, but not limited to: Other chemicals which may be handled, physical requirements (cut/puncture protection, dexterity, thermal protection), potential body reactions to glove materials, as well as the instructions/specifications provided by the glove supplier.

Other protection: Use protective clothing chemically resistant to this material. Selection of specific items such as face shield, boots, apron, or full body suit will depend on the task.

Respiratory protection: Respiratory protection should be worn when there is a potential to exceed the exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, wear respiratory protection when adverse effects, such as respiratory irritation or discomfort have been experienced, or where indicated by your risk assessment process. For most conditions no respiratory protection should be needed; however, if discomfort is experienced, use an approved air-purifying respirator.

The following should be effective types of air-purifying respirators: Organic vapor cartridge with a particulate pre-filter.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance

Physical state	Liquid.
Color	Yellow
Odor	Mild
Odor Threshold	no data available
pH	3.36 1% pH Electrode (1% aqueous suspension)
Melting point/range	Not applicable
Freezing point	No test data available
Boiling point (760 mmHg)	No test data available
Flash point	closed cup > 100 °C (> 212 °F) <i>Pensky-Martens Closed Cup ASTM D 93</i>
Evaporation Rate (Butyl Acetate = 1)	No test data available
Flammability (solid, gas)	no data available
Lower explosion limit	No test data available
Upper explosion limit	No test data available
Vapor Pressure	No test data available
Relative Vapor Density (air = 1)	No test data available
Relative Density (water = 1)	1.11 at 20 °C (68 °F) <i>Digital Density Meter (Oscillating Coil)</i>
Water solubility	emulsifies

Partition coefficient: n-octanol/water	no data available
Auto-ignition temperature	> 325 °C (> 617 °F)
Decomposition temperature	No test data available
Dynamic Viscosity	23.4 mPa.s at 20 °C (68 °F) 10.8 mPa.s at 40 °C (104 °F)
Kinematic Viscosity	No test data available
Explosive properties	No
Oxidizing properties	No significant increase (>5C) in temperature.
Liquid Density	1.11 g/cm ³ at 20 °C (68 °F) <i>Digital density meter</i>
Molecular weight	no data available

NOTE: The physical data presented above are typical values and should not be construed as a specification.

10. STABILITY AND REACTIVITY

Reactivity: no data available

Chemical stability: Thermally stable at typical use temperatures.

Possibility of hazardous reactions: Polymerization will not occur.

Conditions to avoid: Exposure to elevated temperatures can cause product to decompose. Generation of gas during decomposition can cause pressure in closed systems.

Incompatible materials: Avoid contact with: Strong acids. Strong bases. Strong oxidizers.

Hazardous decomposition products: Decomposition products depend upon temperature, air supply and the presence of other materials. Decomposition products can include and are not limited to: Hydrogen chloride. Nitrogen oxides. Phosgene.

11. TOXICOLOGICAL INFORMATION

Toxicological information on this product or its components appear in this section when such data is available.

Acute toxicity

Acute oral toxicity

Low toxicity if swallowed. Small amounts swallowed incidentally as a result of normal handling operations are not likely to cause injury; however, swallowing larger amounts may cause injury.

LD50, Rat, female, 3,200 mg/kg

Acute dermal toxicity

Prolonged skin contact is unlikely to result in absorption of harmful amounts.

LD50, Rat, male and female, > 5,000 mg/kg

Acute inhalation toxicity

Prolonged exposure is not expected to cause adverse effects. Based on the available data, respiratory irritation was not observed.

LC50, Rat, male and female, 4 Hour, dust/mist, > 5.05 mg/l No deaths occurred at this concentration.

Skin corrosion/irritation

Brief contact may cause moderate skin irritation with local redness. May cause drying and flaking of the skin.

Serious eye damage/eye irritation

May cause slight eye irritation. Corneal injury is unlikely.

Sensitization

Has demonstrated the potential for contact allergy in mice.

For respiratory sensitization:
No relevant data found.

Specific Target Organ Systemic Toxicity (Single Exposure)

Evaluation of available data suggests that this material is not an STOT-SE toxicant.

Specific Target Organ Systemic Toxicity (Repeated Exposure)

For the active ingredient(s):
In animals, effects have been reported on the following organs:
Kidney.
Liver.

Carcinogenicity

For the minor component(s): In long-term animal studies with ethylene glycol butyl ether, small but statistically significant increases in tumors were observed in mice but not rats. The effects are not believed to be relevant to humans. If the material is handled in accordance with proper industrial handling procedures, exposures should not pose a carcinogenic risk to man. For similar active ingredient(s). Triclopyr. Did not cause cancer in laboratory animals.

Teratogenicity

For the active ingredient(s): Has been toxic to the fetus in laboratory animals at doses toxic to the mother. Did not cause birth defects in laboratory animals.

Reproductive toxicity

For similar active ingredient(s). Triclopyr. In laboratory animal studies, effects on reproduction have been seen only at doses that produced significant toxicity to the parent animals.

Mutagenicity

For the active ingredient(s): In vitro genetic toxicity studies were negative. Animal genetic toxicity studies were negative.

Aspiration Hazard

Based on available information, aspiration hazard could not be determined.

Carcinogenicity Component	List	Classification
Ethylene glycol monobutyl ether	ACGIH	A3: Confirmed animal carcinogen with unknown relevance to humans.

12. ECOLOGICAL INFORMATION

Ecotoxicological information on this product or its components appear in this section when such data is available.

Toxicity

Acute toxicity to fish

For similar material(s):

Material is highly toxic to aquatic organisms on an acute basis (LC50/EC50 between 0.1 and 1 mg/L in the most sensitive species tested).

For similar material(s):

LC50, *Lepomis macrochirus* (Bluegill sunfish), 96 Hour, 0.44 mg/l, OECD Test Guideline 203 or Equivalent

LC50, *Oncorhynchus mykiss* (rainbow trout), 96 Hour, 0.984 mg/l, OECD Test Guideline 203 or Equivalent

Acute toxicity to aquatic invertebrates

For similar material(s):

EC50, *Daphnia magna* (Water flea), 48 Hour, 0.35 mg/l, OECD Test Guideline 202 or Equivalent

Acute toxicity to algae/aquatic plants

For similar material(s):

EbC50, *Pseudokirchneriella subcapitata* (green algae), 72 Hour, Biomass, 11 mg/l, OECD Test Guideline 201 or Equivalent

Toxicity to Above Ground Organisms

Based on information for a similar material:

Material is slightly toxic to birds on an acute basis (LD50 between 501 and 2000 mg/kg).

Based on information for a similar material:

oral LD50, *Colinus virginianus* (Bobwhite quail), 1,350 mg/kg

Persistence and degradability

Triclopyr-2-butoxyethyl ester

Biodegradability: Chemical degradation (hydrolysis) is expected in the environment.

Material is expected to biodegrade very slowly (in the environment). Fails to pass OECD/EEC tests for ready biodegradability.

10-day Window: Fail

Biodegradation: 18 %

Exposure time: 28 d

Method: OECD Test Guideline 301B or Equivalent

Theoretical Oxygen Demand: 1.39 mg/mg

Biological oxygen demand (BOD)

Incubation Time	BOD
	0.004 mg/mg

Stability in Water (1/2-life)

Hydrolysis, half-life, 8.7 d, pH 7, Half-life Temperature 25 °C

Photodegradation

Atmospheric half-life: 5.6 Hour

Method: Estimated.

Ethylene glycol monobutyl ether

Biodegradability: Material is readily biodegradable. Passes OECD test(s) for ready biodegradability. Material is ultimately biodegradable (reaches > 70% mineralization in OECD test(s) for inherent biodegradability).

10-day Window: Pass

Biodegradation: 90.4 %

Exposure time: 28 d

Method: OECD Test Guideline 301B or Equivalent

Theoretical Oxygen Demand: 2.30 mg/mg

Chemical Oxygen Demand: 2.21 mg/g Dichromate

Biological oxygen demand (BOD)

Incubation Time	BOD
5 d	5.2 %
10 d	57 %
20 d	72.2 %

Balance

Biodegradability: No relevant data found.

Bioaccumulative potential

Triclopyr-2-butoxyethyl ester

Bioaccumulation: Bioconcentration potential is moderate (BCF between 100 and 3000 or Log Pow between 3 and 5).

Partition coefficient: n-octanol/water(log Pow): 4.62

Bioconcentration factor (BCF): 110 Fish.

Ethylene glycol monobutyl ether

Bioaccumulation: Bioconcentration potential is low (BCF < 100 or Log Pow < 3).
Partition coefficient: n-octanol/water(log Pow): 0.81 Measured
Bioconcentration factor (BCF): 3.2

Balance

Bioaccumulation: No relevant data found.

Mobility in soil**Triclopyr-2-butoxyethyl ester**

Calculation of meaningful sorption data was not possible due to very rapid degradation in the soil.

For the degradation product:

Triclopyr.

Potential for mobility in soil is very high (Koc between 0 and 50).

Ethylene glycol monobutyl ether

Potential for mobility in soil is high (Koc between 50 and 150).

Partition coefficient(Koc): 67 Estimated.

Balance

No relevant data found.

13. DISPOSAL CONSIDERATIONS

Disposal methods: If wastes and/or containers cannot be disposed of according to the product label directions, disposal of this material must be in accordance with your local or area regulatory authorities. This information presented below only applies to the material as supplied. The identification based on characteristic(s) or listing may not apply if the material has been used or otherwise contaminated. It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste identification and disposal methods in compliance with applicable regulations. If the material as supplied becomes a waste, follow all applicable regional, national and local laws.

14. TRANSPORT INFORMATION

DOT

Not regulated for transport

Check regulations for IATA and IMDG before shipping by air or sea.

This information is not intended to convey all specific regulatory or operational requirements/information relating to this product. Transportation classifications may vary by container volume and may be influenced by regional or country variations in regulations. Additional transportation system information can be obtained through an authorized sales or customer service representative. It is the responsibility of the transporting organization to follow all applicable laws, regulations and rules relating to the transportation of the material.

15. REGULATORY INFORMATION

OSHA Hazard Communication Standard

This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

Superfund Amendments and Reauthorization Act of 1986 Title III (Emergency Planning and Community Right-to-Know Act of 1986) Sections 311 and 312

Acute Health Hazard
Chronic Health Hazard

Superfund Amendments and Reauthorization Act of 1986 Title III (Emergency Planning and Community Right-to-Know Act of 1986) Section 313

This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

California Proposition 65 (Safe Drinking Water and Toxic Enforcement Act of 1986)

This product contains no listed substances known to the State of California to cause cancer, birth defects or other reproductive harm, at levels which would require a warning under the statute.

Pennsylvania (Worker and Community Right-To-Know Act): Pennsylvania Hazardous Substances List and/or Pennsylvania Environmental Hazardous Substance List:

To the best of our knowledge, this product does not contain chemicals at levels which require reporting under this statute.

Pennsylvania (Worker and Community Right-To-Know Act): Pennsylvania Special Hazardous Substances List:

To the best of our knowledge, this product does not contain chemicals at levels which require reporting under this statute.

United States TSCA Inventory (TSCA)

This product contains chemical substance(s) exempt from U.S. EPA TSCA Inventory requirements. It is regulated as a pesticide subject to Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) requirements.

Federal Insecticide, Fungicide and Rodenticide Act

EPA Registration Number: 17545-8-43694

This chemical is a pesticide product registered by the Environmental Protection Agency and is subject to certain labeling requirements under federal pesticide law. These requirements differ from the classification criteria and hazard information required for safety data sheets, and for workplace labels of non-pesticide chemicals. Following is the hazard information as required on the pesticide label:

CAUTION

Causes moderate eye irritation

Harmful if swallowed

Prolonged or frequently repeated skin contact may cause allergic reactions in some individuals.

16. OTHER INFORMATION

Hazard Rating System NFPA

Health	Fire	Reactivity
2	1	0

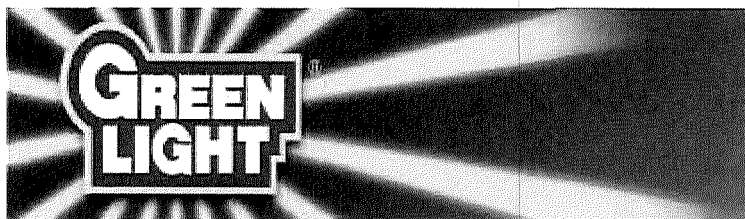
Legend

Absorbed via skin	Absorbed via skin
ACGIH	USA. ACGIH Threshold Limit Values (TLV)
BEI	Biological Exposure Indices
Dow IHG	Dow Industrial Hygiene Guideline
OSHA Z-1	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Contaminants
SSKIN, DSEN, BEI	Absorbed via Skin, Skin Sensitizer, Biological Exposure Indices
TWA	8-hour, time weighted average

Lawn and Garden Products, Inc. urges each customer or recipient of this (M)SDS to study it carefully and consult appropriate expertise, as necessary or appropriate, to become aware of and understand the data contained in this (M)SDS and any hazards associated with the product. The information herein is provided in good faith and believed to be accurate as of the effective date shown above. However, no warranty, express or implied, is given. Regulatory requirements are subject to change and may differ between various locations. It is the buyer's/user's responsibility to ensure that his activities comply with all federal, state, provincial or local laws. The information presented here pertains only to the product as shipped. Since conditions for use of the product are not under the control of the manufacturer, it is the buyer's/user's duty to determine the conditions necessary for the safe use of this product. Due to the proliferation of sources for information such as manufacturer-specific (M)SDSs, we are not and cannot be responsible for (M)SDSs obtained from any source other than ourselves. If you have obtained an (M)SDS from another source or if you are not sure that the (M)SDS you have is current, please contact us for the most current version.

TURFLON® is a registered trademark of Dow AgroSciences, LLC

Material Safety Data Sheet



A VALENT U.S.A. COMPANY

Wipe-Out® Crabgrass Killer Plus Concentrate

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: Wipe-Out® Crabgrass Killer Plus Concentrate
EPA REGISTRATION NUMBER: 2217-933-85827
PRODUCT CODE: Not Established
PRODUCT DESCRIPTION: Herbicide

Wipe-Out® is a registered trademark of Green Light Company.

MANUFACTURER/DISTRIBUTOR
GREEN LIGHT, A VALENT U.S.A. COMPANY
P.O. Box 8025
1600 Riviera Avenue, Suite 200
Walnut Creek, CA 94596-8025

EMERGENCY TELEPHONE NUMBERS
HEALTH EMERGENCY OR SPILL (24 hr):
(800) 892-0099
TRANSPORTATION (24 hr.): CHEMTREC
(800) 424-9300 or (202) 483-7616

PRODUCT INFORMATION
GREEN LIGHT PRODUCTS: (210) 494-3481

2. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

- CAUTION**
- Avoid contact with eyes, skin and clothing
 - Harmful if swallowed
 - Causes moderate eye irritation
 - Moderately irritating to the skin
 - Moderately irritating when inhaled
 - Keep out of reach of children

POTENTIAL HEALTH EFFECTS

Acute Toxicity (Primary Routes of Exposure): Skin, Ingestion, Inhalation

Acute Eye Contact: Causes moderate eye irritation.

Acute Skin Contact: May cause mild to moderate dermal irritation.

Acute Ingestion: Harmful if swallowed.

Acute Inhalation: May cause mild to moderate respiratory irritation. Inhalation of sprays may cause burning sensations in the respiratory tract, resulting in coughing.

Chronic Toxicity (including cancer): Repeated and/or prolonged overexposure may cause chronic irritation of respiratory tract. Overexposure may cause adverse effects to liver, kidneys, skin, muscular, and gastrointestinal systems.

Signs and Symptoms of Systemic Effects: Burning sensation; coughing; dizziness.

Potentially Aggravated Medical Conditions: Asthma or skin lesions may be aggravated by exposure to this product.

Emergency Telephone: (800) 892-0099
REVISION NUMBER: 2

MSDS NO.: GNL-0046
REVISION DATE: 08/18/2010

For complete discussion of the toxicology data from which this evaluation was made, refer to Section 11. For Ecotox/Environmental Information, refer to Section 12. For Regulatory Information, refer to Section 15.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS Number	Weight/ Percent	Purpose
3,7-Dichloroquinoline-8-carboxylic acid (Quinclorac)	84087-01-4	3.33-3.68	Active Ingredient
Dimethylamine salt of 2,4-dichlorophenoxyacetic acid (2,4-D)	2008-39-1	6.94-7.66	Active Ingredient
Dimethylamine salt of 3,6-dichloro-o-anisic acid (Dicamba)	2300-66-5	0.76-0.92	Active Ingredient
Others	No CAS#	88.7	Other Ingredients

Other ingredients, which are maintained as trade secrets, are any substances other than an active ingredient contained in this product. Some of these may be hazardous, but their identities are withheld because they are considered trade secrets. The hazards associated with the other ingredients are addressed in this document. Specific information on other ingredients for the management of exposures, spills, or safety assessments can be obtained by a treating physician or nurse by calling (800) 892-0099 at any time.

4. FIRST AID MEASURES

EMERGENCY NUMBER (800) 892-0099

Have the product container or label with you when calling a poison control center or doctor, or going for treatment. You may also contact **1-800-892-0099** for emergency medical treatment information.

EYE CONTACT:

Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Call a poison control center or doctor for treatment advice.

SKIN CONTACT:

Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call a poison control center or doctor for treatment advice.

INGESTION:

Call a poison control center or doctor immediately for treatment advice. Have person sip a glass of water if able to swallow. DO NOT induce vomiting unless told to do so by the poison control center or doctor. Do not give anything by mouth to an unconscious person.

INHALATION:

Move person to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably by mouth-to-mouth, if possible. Call a poison control center or doctor for further treatment advice.

NOTES TO PHYSICIAN:

None

5. FIRE FIGHTING MEASURES

FLASH POINT: 141° F (61° C)

FLASH POINT METHOD: Closed Cup

EXTINGUISHING MEDIA: Carbon dioxide, dry chemical, foam, or water.

FLAMMABLE LIMITS IN AIR - LOWER (%):

Not applicable

FLAMMABLE LIMITS IN AIR - UPPER (%):

Not applicable

OSHA FLAMMABILITY CLASS: The low flash point of this product is due to a minor component in the mixture. Based on independent laboratory testing of similar products, this product would not sustain combustion as specified in DOT Regulation 49 CFR 173 Appendix H, and therefore would not be classified as a combustible liquid.

NFPA RATING:

Health: 2
Flammability: 1
Reactivity: 0
Special: None

(Least-0, Slight-1, Moderate-2, High-3, Extreme-4). These values are obtained using professional judgement. Values were not available in the guidelines or published evaluations prepared by the National Fire Protection Association, NFPA.

FIRE FIGHTING INSTRUCTIONS: As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH approved (or equivalent) and full protective gear.

HAZARDOUS DECOMPOSITION PRODUCTS: When heated to the point of decomposition toxic fumes of HCl and oxides of carbon and nitrogens may be given off.

6. ACCIDENTAL RELEASE MEASURES

GREEN LIGHT EMERGENCY PHONE NUMBER: (800) 892-0099

CHEMTREC EMERGENCY PHONE NUMBER: (800) 424-9300

OBSERVE PRECAUTIONS IN SECTION 8: PERSONAL PROTECTION

Stop the source of the spill if safe to do so. Contain the spill to prevent further contamination of the soil, surface water, or ground water. For additional spill response information refer to the North American Emergency Response Guidebook.

UN/NA NUMBER: Not applicable

EMERGENCY RESPONSE GUIDEBOOK NO.: Not applicable

FOR SPILLS ON LAND:

CONTAINMENT: Avoid runoff into storm sewers and ditches which lead to waterways. Contain spilled liquids with dry sorbents.

CLEANUP: Clean up spill immediately. Absorb spill with inert material (such as dry sand or earth), then place in a chemical waste container. Wash area with soap and water. Pick up wash liquid with additional absorbent and place in a chemical waste container.

FOR SPILLS IN WATER:

CONTAINMENT: This material is water soluble. Stop or reduce contamination of any water. Isolate contaminated water.

CLEANUP: Clean up spill immediately. Absorb spill with inert material. Remove contaminated water for treatment or disposal.

7. HANDLING AND STORAGE

END USER MUST READ AND OBSERVE ALL PRECAUTIONS ON PRODUCT LABEL.

HANDLING:

Keep pesticide in original container. Do not store or transport near food or feed. Do not contaminate food or feed. Do not put concentrate into food or drink containers. Do not dilute concentrate in food or drink containers. Store in a cool, dry place, out of direct sunlight.

STORAGE:

Protect from freezing. Do not contaminate water, food or feed by storage or disposal. Store in a cool, dry area away from children and pets. Keep pesticide in original container only. Product should be stored in a locked storage area.

Emergency Telephone: (800) 892-0099
REVISION NUMBER: 2

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REVISION DATE: 08/18/2010

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

END USER MUST READ AND OBSERVE ALL PRECAUTIONS ON PRODUCT LABEL.

EYES & FACE: Appropriate eye protection must be worn when working with this material or serious harm can result. Wear chemical goggles or a face shield at all times.

RESPIRATORY PROTECTION: Use this material only in well ventilated areas. Unless ventilation is adequate to keep airborne concentrations below recommended exposure standards, approved respiratory protection should be worn.

SKIN & HAND PROTECTION: Avoid contact with skin or clothing. Skin contact should be minimized by wearing protective clothing including gloves.

ENGINEERING CONTROLS: Use local exhaust. Local exhaust ventilation should be used in areas without good cross ventilation.

EXPOSURE LIMITS

Chemical Name	ACGIH Exposure Limits	OSHA Exposure Limits	Manufacturer's Exposure Limits
3,7-Dichloroquinoline-8-carboxylic acid (Quinclorac)	None	None	None
Dimethylamine salt of 2,4-dichlorophenoxyacetic acid (2,4-D)	None	None	None
Dimethylamine salt of 3,6-dichloro-o-anisic acid (Dicamba)	None	None	None
Others	None	None	None

9. PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL FORM:	Liquid
COLOR:	Dark brown
ODOR:	Faint sweet odor
FLASH POINT:	141° F (61° C)
FLASH POINT METHOD:	Closed Cup
BOILING POINT:	212° F (100° C)
DENSITY:	8.71 lb/gal
SPECIFIC GRAVITY:	1.04470 (H ₂ O = 1)
VAPOR PRESSURE:	<17 mm Hg @ 68° F (20° C)
pH:	7.0 - 9.0
SOLUBILITY:	Soluble in water

10. STABILITY AND REACTIVITY

CHEMICAL STABILITY:	Stable
INCOMPATIBILITY:	Contact with acids
OXIDATION/REDUCTION PROPERTIES:	No data available
EXPLODABILITY:	Not expected to be explosive
HAZARDOUS DECOMPOSITION PRODUCTS:	When heated to the point of decomposition toxic fumes of HCl and oxides of carbon and nitrogens may be given off.
CONDITIONS TO AVOID:	Acidic materials

11. TOXICOLOGICAL INFORMATION

ACUTE TOXICITY:

Oral Toxicity LD ₅₀ (rats)	Not available	EPA Tox Category	Not available
Dermal Toxicity LD ₅₀ (rabbits)	Not available	EPA Tox Category	Not available
Inhalation Toxicity LC ₅₀ (rats)	Not available	EPA Tox Category	Not available
Eye Irritation (rabbits)	Moderately irritating	EPA Tox Category	III
Skin Irritation (rabbits)	Moderately irritating	EPA Tox Category	III
Skin Sensitization (guinea pigs)	Not available	EPA Tox Category	Not applicable

CARCINOGEN CLASSIFICATION

Chemical Name	IARC - Group 1 (carcinogenic to humans)	IARC - Group 2A (Probably carcinogenic)	IARC - Group 2B (Possibly carcinogenic)	NTP Carcinogen List
3,7-Dichloroquinoline-8-carboxylic acid (Quinclorac)	No	No	No	Not listed
Others	No	No	No	Not listed
Dimethylamine salt of 2,4-dichlorophenoxyacetic acid (2,4-D)	No	No	No	Not listed
Dimethylamine salt of 3,6-dichloro-o-anisic acid (Dicamba)	No	No	No	Not listed

For a summary of the potential for adverse health effects from exposure to this product, refer to Section 2. For information regarding regulations pertaining to this product, refer to Section 15.

12. ECOLOGICAL INFORMATION

AQUATIC ORGANISM TOXICITY: This product is toxic to aquatic invertebrates. Drift or runoff may adversely affect aquatic invertebrates and non-target plants. Do not apply directly to water.

OTHER ENVIRONMENTAL INFORMATION:

Most cases of groundwater contamination involving phenoxy herbicides such as 2,4-D and MCPP have been associated with mixing/loading and disposal sites. Caution should be exercised when handling 2,4-D and MCPP pesticides at such sites to prevent contamination of groundwater supplies. Use of closed systems for mixing and transferring this pesticide will reduce the probability of spills. Placement of the mixing/loading equipment on an impervious pad to contain spills will help prevent groundwater contamination.

13. DISPOSAL CONSIDERATIONS

END USERS MUST DISPOSE OF ANY UNUSED PRODUCT AS PER THE LABEL RECOMMENDATIONS.

PRODUCT DISPOSAL:

When discarded in its purchased form, this product is listed RCRA hazardous waste and should be managed as a hazardous waste. (40 CFR Part 261.20-24) Do not contaminate water when disposing of equipment washwater. When cleaning equipment, do not pour the washwater on the ground; spray or drain over a large area away from wells and other water sources. Do not apply when weather conditions favor drift from target area.

CONTAINER DISPOSAL: For Metal Containers: Triple rinse (or equivalent). Then offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill, or by other procedures approved by state and local authorities.

For Plastic Containers: Triple rinse (or equivalent). Then offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill, or incineration, or if allowed by state and local authorities by burning. If burned, stay out of smoke.

DISPOSAL METHODS: Check government regulations and local authorities for approved disposal of this material. Dispose in accordance with applicable laws and regulations.

14. TRANSPORT INFORMATION

UN/NA NUMBER:	Not applicable
DOT (ground) SHIPPING NAME:	Herbicide, liquid, non-regulated
TECHNICAL NAME (hazardous material):	Not applicable
HAZARD CLASS:	Not applicable
PACKING GROUP:	Not applicable
DOT REPORTABLE QUANTITY (RQ):	Not applicable
REMARKS:	Freight Class: Herbicides, NOI - NMFC Class 155050, sub 6
EXEMPTION REQUIREMENT:	None
EMERGENCY RESPONSE GUIDEBOOK NO.:	Not applicable
MARINE POLLUTANT:	Not applicable

15. REGULATORY INFORMATION

PESTICIDE REGULATIONS: All pesticides are governed under FIFRA (Federal Insecticide, Fungicide, and Rodenticide Act). Therefore, the regulations presented below are pertinent only when handled outside of the normal use and applications of pesticides. This includes waste streams resulting from manufacturing/formulation facilities, spills or misuse of products, and storage of large quantities of products containing hazardous or extremely hazardous substances.

U.S. FEDERAL REGULATIONS:

Ingredients in this product are reviewed against an inclusive list of federal regulations. Therefore, the user should consult appropriate authorities. The federal regulations reviewed include: Clean Water Act, SARA, CERCLA, RCRA, DOT, TSCA and OSHA. If no components or information is listed in the space below this paragraph, then none of the regulations reviewed are applicable.

Dimethylamine salt of 2,4-dichlorophenoxyacetic acid (2,4-D)

CERCLA Reportable Quantity (RQ): 1370 lbs of the formulation which contains 100 lbs

Dimethylamine salt of 3,6-dichloro-o-anisic acid (Dicamba)

SARA 313 Chemicals

SARA (311, 312):

Immediate Health: Yes

Emergency Telephone: (800) 892-0099
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Chronic Health: Yes
Fire: No
Sudden Pressure: No
Reactivity: No

STATE REGULATIONS:

Each state may promulgate standards more stringent than the federal government. This section cannot encompass an inclusive list of all state regulations. Therefore, the user should consult state or local authorities. The state regulations reviewed include: California Proposition 65, California Directors List of Hazardous Substances, Massachusetts Right to Know, Michigan Critical Materials List, New Jersey Right to Know, Pennsylvania Right to Know, Rhode Island Right to Know and the Minnesota Hazardous Substance list. For Washington State Right to Know, see Section 8 for Exposure Limit information. For Louisiana Right to Know refer to SARA information listed under U.S. Regulations above. If no components or information is listed in the space below this paragraph, then none of the regulations reviewed are applicable.

For information regarding potential adverse health effects from exposure to this product, refer to Sections 2 and 11.

16. OTHER INFORMATION

REASON FOR ISSUE: Updated product name.
MSDS NO.: GNL-0046
EPA REGISTRATION NUMBER: 2217-933-85827
REVISION NUMBER: 2
REVISION DATE: 08/18/2010
SUPERCEDES DATE: June 9, 2010
RESPONSIBLE PERSON(S): Valent U.S.A. Corporation, Corporate EH&S, (925) 256-2803

This Material Safety Data Sheet (MSDS) serves different purposes than and DOES NOT REPLACE OR MODIFY THE EPA-APPROVED PRODUCT LABELING (attached to and accompanying the product container). This MSDS provides important health, safety, and environmental information for employers, employees, emergency responders and others handling large quantities of the product in activities generally other than product use, while the labeling provides that information specifically for product use in the ordinary course.

Use, storage and disposal of pesticide products is regulated by the EPA under the authority of the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) through the product labeling. All necessary and appropriate precautionary, use, storage, and disposal information is set forth on that labeling. It is a violation of federal law to use a pesticide product in any manner not prescribed on the EPA-approved label.

The information in this MSDS is based on data available to us as of the revision date given herein, and believed to be correct. Contact Valent U.S.A. Corporation to confirm if you have the most current MSDS.

Judgements as to the suitability of information herein for the individual's own use or purposes are necessarily the individual's own responsibility. Although reasonable care has been taken in the preparation of such information, Valent extends no warranties, makes no representations, and assumes no responsibility as to the accuracy or suitability of such information for application to the individual's purposes or the consequences of its use.

2010 Green Light, a Valent U.S.A. Company

Emergency Telephone: (800) 892-0099
REVISION NUMBER: 2

MSDS NO.: GNL-0046
REVISION DATE: 08/18/2010

SAFETY DATA SHEET

BIFEN I/T

1. IDENTIFICATION

Product name: **BIFEN I/T**
 Product type: Insecticide/Termiticide
 EPA Registration No.: 53883-118
 Chemical name of active ingredient(s): Bifenthrin: (2-methyl[1,1'-biphenyl]-3-yl)-methyl-3-(2-chloro-3,3,3-trifluoro-1-propenyl)-2,2-dimethyl cyclopropanecarboxylate
 Manufacturer/Registrant: Control Solutions, Inc.
 5903 Genoa-Red Bluff
 Pasadena, TX 77507
 For fire, spill, and/or leak emergencies, contact Chemtrec: Phone: 1-800-424-9300
 For medical emergencies and health and safety inquiries, contact Safety Call: Phone: 1-866-897-8050
 Poison Control Center Phone: 1-800-222-1222

2. HAZARDS IDENTIFICATIONS

OSHA HCS CLASSIFICATION (29 CFR 1910.1200)

Acute Toxicity:

	Acute oral	Acute dermal	Acute inhalation	Eye irritation	Skin irritation	Skin Sensitization
Category	Category 4	NC	Category 4	NC	NC	NC

NC: Not classified

SIGNAL WORD: WARNING

HAZARD STATEMENTS:

- Harmful if swallowed.
- Harmful if inhaled

PICTOGRAM:



PRECAUTIONARY STATEMENTS: Wash hands thoroughly after handling. Do not eat, drink or smoke when using this product. If swallowed: Call a poison center if you feel unwell. Rinse mouth. Avoid breathing mist, vapors and spray. Use only outdoors or in a well-ventilated area. In inhaled: remove a person to fresh air and keep comfortable for breathing. Contact Safety Call® International for emergency medical treatment at (866) 897-8050.

3. COMPOSITION/INFORMATION ON INGREDIENTS

COMMON NAME	CAS NO.	%	OSHA PEL	ACGIH TLV	OTHER	NTP/IARC/OSHA (Carcinogen)
Bifenthrin	82657-04-3	7.9	NA	NA	NA	NA

NA=Not available.

SAFETY DATA SHEET

BIFEN I/T

4. FIRST AID MEASURES

FIRST AID	
IF SWALLOWED:	<ul style="list-style-type: none"> • Call a poison control center or doctor immediately for treatment advice. • Have person sip a glass of water if able to swallow. • Do not induce vomiting unless told to do so by the poison control center or doctor. • Do not give anything by mouth to an unconscious person.
IF INHALED:	<ul style="list-style-type: none"> • Move person to fresh air. • If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably by mouth-to-mouth if possible. • Call a poison control center or doctor for further treatment advice.
IF ON SKIN OR CLOTHING:	<ul style="list-style-type: none"> • Take off contaminated clothing. • Rinse skin immediately with plenty of water for 15-20 minutes. • Call a poison control center or doctor for treatment advice.
IF IN EYES:	<ul style="list-style-type: none"> • Hold eye open and rinse slowly and gently with water 15-20 minutes. • Remove contact lenses, if present, after the first 5 minutes, then continuing rinsing eye. • Call a poison control center or doctor for treatment advice.
<p>Have the product container or label with you when calling a poison control center or doctor, or going for treatment. You may also contact Poison Control Center 1-800-222-1222.</p>	
<p>Note to Physician - This product is a pyrethroid. If large amounts have been ingested, the stomach and intestine should be evacuated. Treatment is symptomatic and supportive. Digestible fats, oils, or alcohol may increase absorption and so should be avoided.</p>	

5. FIRE FIGHTING MEASURES

FLASH POINT: Will not flash.

FLAMMABLE LIMITS: Not applicable

EXTINGUISHING MEDIA: Water fog, CO₂, foam, dry chemical.

FIRE & EXPLOSION HAZARDS: Pesticide fires have potential to emit hazardous decomposition products.

FIRE-FIGHTING PROCEDURES: Isolate fire area and evacuate downwind. DO NOT breathe gases, smoke or vapors generated. Wear self-contained breathing apparatus and full-protective clothing.

HAZARDOUS DECOMPOSITION PRODUCTS: May release irritating and toxic gases due to thermal decomposition. Products of decomposition may include CO, CO₂, hydrogen chloride, and hydrogen fluoride.

6. ACCIDENTAL RELEASE MEASURES

ABSORBENT MATERIALS AND CONTAINMENT: Universal absorbent pads, vermiculite, absorbent booms, or clay granules. Do not discharge into municipal wastewater or public storm drains. Eliminate runoff as much as possible.

WASTE DISPOSAL: Vacuum or sweep contaminated absorbent material into suitable container. Seal container and dispose of all contaminated waste material in municipal land-fill or through licensed TSDF. Open dumping is prohibited. Not an RCRA hazardous waste.

7. HANDLING AND STORAGE

Do not contaminate water, food, or feed by storage or disposal.

PRECAUTIONS TO BE TAKEN IN HANDLING: Do not use or store near heat, open flame or hot surfaces. Carefully open containers and after partial use close container tightly. Avoid contact with skin, eyes or clothing. Avoid breathing spray mist. Wash thoroughly with soap and water after handling. Remove contaminated clothing and wash before reuse.

SAFETY DATA SHEET

BIFEN I/T

PRECAUTIONS TO BE TAKEN IN STORAGE: Store upright at room temperature. Avoid exposure to extreme temperatures. Do not store near heat or open flame. Store away from foodstuffs, feed, and children.

STORAGE TEMPERATURE (MIN/MAX): Normal ambient temperatures. Avoid exposure to extreme temperatures.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

THE FOLLOWING RECOMMENDATIONS FOR EXPOSURE CONTROLS/PERSONAL PROTECTION ARE INTENDED FOR THE MANUFACTURE, FORMULATION, PACKAGING AND USE OF THIS PRODUCT.

FOR COMMERCIAL APPLICATIONS AND/OR ON-FARM APPLICATIONS CONSULT THE PRODUCT LABEL.

EYE PROTECTION: Protective eyewear or chemical safety glasses with side shields or chemical goggles when working in non-ventilated spaces.

SKIN PROTECTION: Long-sleeve shirt, long pants, shoes plus socks.

HAND PROTECTION: Chemical-resistant gloves.

RESPIRATOR REQUIREMENTS: All pesticide handlers must wear a respiratory protection device when working in a non-ventilated space. Use one of the following: NIOSH-approved respirator with an R, P, or HE filter or a NIOSH-approved respirator with an organic vapor (OV) cartridge or canister with any R, P, or HE prefilter.

VENTILATION: Whenever possible, adequate ventilation should be used to minimize the need for personal protective equipment.

WORK HYGIENIC PRACTICES:

Clean water should be available to rinse eyes and skin in case of chemical exposure. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, or using tobacco. Thoroughly wash the outside of gloves with soap and water prior to removal. Remove and wash contaminated clothing and wash before reuse; use detergent and hot water. Keep and wash separately from other laundry. Leather items (such as watchbands, belts, shoes) that become contaminated should be removed and destroyed.

ADDITIONAL PROTECTIVE MEASURES:

Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables, use detergent and hot water. Keep and wash PPE separately from other laundry.

USER SAFETY RECOMMENDATIONS:

Users Should:

- Wash hands before eating, drinking, chewing gum, using tobacco or using the toilet.
- Remove clothing immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.
- Remove PPE immediately after handling this product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.

EXPOSURE GUIDELINES: Refer to Section 3.

ENGINEERING CONTROLS: Minimize airborne concentrations.

9. PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE: Off white liquid

ODOR: Mild characteristic

pH: 5.8-6.2

FLASH POINT: Will not flash

SPECIFIC GRAVITY: 1.037 g/ml

SOLUBILITY IN WATER: Dispersible

VISCOSITY: 550-750 cps

SAFETY DATA SHEET

BIFEN I/T

10. STABILITY AND REACTIVITY

STABILITY: Stable under normal conditions.

CONDITIONS TO AVOID: Exposure to extreme temperature.

HAZARDOUS DECOMPOSITION PRODUCTS: May release irritating and toxic gases due to thermal decomposition. Products of decomposition may include CO, CO₂, hydrogen chloride, and hydrogen fluoride.

HAZARDOUS POLYMERIZATION: Will not occur.

11. TOXICOLOGICAL INFORMATION

ACUTE TOXICITY/IRRITATION STUDIES:

Acute Oral LD₅₀ (Rat): > 632 mg/kg

Acute Dermal LD₅₀ (Rabbit): >2,000 mg/kg

Acute Inhalation LC₅₀ (Rat): >11.58 mg/L/1 hr

Eye Irritation: Non-irritating

Skin Irritation: Non-irritating

Dermal Sensitization: No data available

POTENTIAL HEALTH EFFECTS: Effects from overexposure may result from either swallowing, inhaling or coming into contact with the skin or eyes. Symptoms of overexposure include bleeding from the nose, tremors and convulsions. Contact with bifenthrin may occasionally produce skin sensations such as rashes, numbing, burning or tingling. These skin sensations are reversible and usually subside within 12 hours.

MUTAGENIC POTENTIAL:

Bifenthrin: None observed.

TERATOGENIC EFFECTS:

Bifenthrin: None observed.

12. ECOLOGICAL INFORMATION

ENVIRONMENTAL HAZARDS: This pesticide is extremely toxic to fish and aquatic invertebrates. Do not apply directly to water, to areas where surface waters present or to intertidal areas below the mean high water mark. Drift and run-off from treated areas may be hazardous to aquatic organisms in neighboring areas. Do not contaminate water when disposing of equipment washwaters. Care should be used when spraying to avoid fish and reptile pets in/around ornamental ponds.

This product is highly toxic to bees exposed to direct treatment or residues on blooming crops or weeds. Do not apply this product or allow to drift to blooming crops if bees are visiting the treatment area.

ECOTOXICOLOGICAL INFORMATION:

Aquatic Organisms Effects:

Rain trout LC₅₀: 0.00015 mg/L

Bluegill LC₅₀: 0.00035 mg/L

Daphnia magna EC₅₀: 0.0016 µg/L

Effects on Birds:

Mallard Duck LD50 (21-day): 2150 mg/kg

Bobwhite quail LD50 (21-day): 1,800 mg/kg

13. DISPOSAL CONSIDERATIONS

PESTICIDE DISPOSAL: Pesticide wastes are toxic. Do not contaminate water, food, or feed by storage or disposal. Improper disposal of excess pesticide, spray mixture, or rinsate is a violation of Federal Law. Dispose of excess or waste pesticide by use according to label directions, or contact your State Pesticide or Environmental Control Agency, or the Hazardous Waste representative at the nearest EPA Regional Office for guidance.

SAFETY DATA SHEET

BIFEN I/T

CONTAINER DISPOSAL: Dispose of product containers, waste containers, and residues according to label instructions and local, state, and federal health and environmental regulations.

14. TRANSPORT INFORMATION

DOT CLASSIFICATION:

Not Regulated.

INTERNATIONAL TRANSPORTATION:

IMO (vessel): UN3082, Environmentally Hazardous substances, liquid, n.o.s. (bifenthrin), 9, PG III, Marine Pollutant

IATA (air): UN3082, Environmentally Hazardous substances, liquid, n.o.s. (bifenthrin), 9, PG III, Marine Pollutant

15. REGULATORY INFORMATION

FIFRA INFORMATION:

This chemical is a pesticide product registered by the Environmental Protection Agency and is subject to certain labeling requirements under federal pesticide law. These requirements different from the classification criteria and hazard information for safety data sheet, and for workplace labels of non-pesticide chemicals. Following is the hazard information as required on the pesticide label.

CAUTION Harmful if swallowed, inhaled, or absorbed through skin. Avoid contact with skin, eyes or clothing. Avoid breathing spray mist. Wash thoroughly with soap and water after handling. Remove contaminated clothing and wash before reuse.

SARA TITLE III CLASSIFICATION:

Section 302: Not applicable.

Section 311/312: Acute health hazard (immediate)
Chronic health hazard (delayed)

Section 313: Bifenthrin (7.9%) CAS #:82657-04-3

CA PROPOSITION 65: Not applicable

CERCLA RQ: Not applicable

RCRA CLASSIFICATION: Under RCRA, it is the responsibility of the product user to determine at the time of disposal, whether a material containing the product or derived from the product should be classified as a hazardous waste.

TSCA STATUS: The ingredients of this product are listed on the TSCA inventory or are exempt.

16. OTHER INFORMATION

HAZARD RATINGS	NFPA	HMIS	
HEALTH:	1	1	0 MINIMAL
FLAMMABILITY:	1	1	1 SLIGHT
REACTIVITY:	0	0	2 MODERATE
			3 HIGH
			4 SEVERE

MSDS DATE: 11-9-2012. Supersedes version dated 8-12-2011. Changes made to all sections.

The information and recommendations contained herein are based upon data believed to be correct. However, no warranty of any kind, expressed or implied, is made with respect to the information contained herein.



SAFETY DATA SHEET

SECTION 1: IDENTIFICATION

Product Name: **MasterLine Bifenthrin 7.9 Termiticide/Insecticide**
Description: Synthetic Pyrethroid Insecticide
EPA Reg. No: 73748-7

Company Name and Address:
Univar Environmental Sciences
11305 Four Points Drive
Bldg. 1, Suite 210
Austin, Texas 78726

Emergency Response Telephone Numbers
For Spills Call: 1-(800)-424-9300
For Medical Emergencies Call: 1-(866)-674-4334
For Other Emergencies Call: 1-(952)-653-3523

SECTION 2: HAZARD IDENTIFICATION

Classification in accordance with regulation HCS 29CFR §1910.1200



WARNING
Harmful if swallowed
Harmful if inhaled
Toxic to fish and aquatic invertebrates.
Toxic to bees exposed to direct treatment on
blooming crops or weeds.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

<u>INGREDIENTS:</u>	<u>(% w/w)</u>
Bifenthrin (CAS Reg. No. 82657-04-3) [1 α ,3 α -(Z)]-(\pm)-(2-methyl[1,1'-biphenyl]-3-yl) methyl 3-2-(chloro-3,3,3-trifluoro-1-propenyl)-2,2-dimethylcyclopropanecarboxylate ¹	7.9%
Inert Ingredients	92.1%

¹ *cis/trans* ratio: minimum 97% (\pm) *cis* and maximum 3% *trans*

SAFETY DATA SHEET

SECTION 4: FIRST AID MEASURES

FIRST AID

- If swallowed** Call a poison control center or doctor immediately for treatment advice. Have person sip a glass of water if able to swallow. Do not induce vomiting unless told to do so by the poison control center or doctor. Do not give anything by mouth to an unconscious person.
- If inhaled** Move person to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably by mouth-to-mouth if possible. Call a poison control center or doctor for further treatment advice.
- If on skin or clothing** Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call a poison control center or doctor for treatment advice.
- If in eyes** Hold eye open and rinse slowly and gently with water 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continuing rinsing eye. Call a poison control center or doctor for treatment advice.

Have the product container or label with you when calling a poison control center or doctor, or going for treatment. For information on this product, contact the National Pesticide Information Center, 1-800-858-7378, Monday-Friday, 7:30 AM-3:30 PM PST. You may also contact the National Poison Control Center, 1-800-222-1222, day or night, for emergency medical treatment information.

Note to Physician - This product is a pyrethroid. If large amounts have been ingested, the stomach and intestine should be evacuated. Treatment is symptomatic and supportive. Digestible fats, oils, or alcohol may increase absorption and so should be avoided.

SECTION 5: FIRE-FIGHTING MEASURES

NATIONAL FIRE PROTECTION ASSOCIATION (NFPA) RATINGS:

Category	Rating
Health	1
Flammability	0
Reactivity	0

Flash Point: Non-flammable (water-based)

Method Used: N/A

SAFETY DATA SHEET

SECTION 5: FIRE-FIGHTING MEASURES (CONT'D)

- Extinguishing Media: Foam, CO₂, or dry chemical is preferred. Water spray or water fog only if necessary. Contain all runoff.
- Fire & Explosion Precautions: Foam fire-extinguishing system is preferred because uncontrolled water can spread possible contamination. Do not allow fire-fighting water to escape into waterways or sewers. Toxic irritating gases can be formed.
- Fire-Fighting Equipment: Use positive-pressure self-contained breathing apparatus and full protective equipment.

SECTION 6: ACCIDENTAL RELEASE MEASURES

SPILLS OR LEAKS: Wear protective clothing as described in Section VII (Personal Protection and Precautions) of this MSDS. Absorb liquid with material such as clay, sand, sawdust, or dirt. Sweep up and place in a suitable container for disposal and label the contents. Area can be washed down with a suitable solution of bleach or soda ash and an appropriate alcohol (methanol, ethanol, or isopropanol). Follow this by washing with a strong soap and water solution. Absorb any excess liquid as indicated above, and add to the disposal container. Keep product, contaminated materials and wash water out of streams and sewers. Wash exposed body areas thoroughly after handling.

SECTION 7: HANDLING AND STORAGE

Keep out of reach of children. Do not contaminate water, food or feed by storage or disposal. Do not apply water-based dilutions of Masterline Bifenthrin 7.9 Termiticide/Insecticide to electrical conduits, motor housings, junction boxes, switch boxes or other electrical equipment because of possible shock hazard.

HANDLING: Wear proper safety equipment specified in Section 8 when mixing, loading or otherwise handling this product.

STORAGE: Keep out of reach of children and animals. Store in original containers only. Store in a cool, dry place and avoid excess heat. Carefully open containers. After partial use replace lids and close tightly. Do not put concentrate or dilute material into food or drink container.



SAFETY DATA SHEET

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

EXPOSURE GUIDELINE(S):

<u>MATERIAL:</u>	<u>OSHA PEL</u>	<u>ACGIH TLV</u>
Active Ingredients: Bifenthrin	Not established	Not established
Inert Ingredients:	Not Established	Not Established

VENTILATION: Provide general and/or local exhaust ventilation to control airborne levels below the exposure guideline. Ventilate all transport vehicles prior to unloading.

PERSONAL PROTECTIVE EQUIPMENT

All pesticide handlers (mixers, loaders, and applicators) must wear long-sleeved shirt and long pants, socks, shoes, and chemical-resistant gloves. After the product is diluted in accordance with label directions for use, and/or when mixing and loading using a closed spray tank transfer system, or an in-line injector system, shirt, pants, socks, shoes, and waterproof gloves are sufficient.

All pesticide handlers must wear protective eyewear when working in non-ventilated space or when applying termiticide by rodding or sub-slab injection.

In addition, all pesticide handlers must wear a respiratory protection device¹ when working in a non-ventilated space.

¹Use one of the following Mine Safety and Health Administration (MSHA)/National Institute for Occupational Safety and Health (NIOSH) air purifying respirator types with approval number prefixes: TC-23C, TC-21C, TC-19C, TC-13F and TC-14G, or a NIOSH approved respirator with any R, P or HE filter or a NIOSH approved respirator with an organic vapor (OV) cartridge or canister with any R, P or HE prefilter.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Color:	White Opaque
Physical State:	Liquid
Odor:	Mild Chemical
Density:	8.48 lbs/gal (1.016 gm/cm ³)
Solubility:	Disperses in water
Viscosity:	60 cps @ 25°C
pH:	6.45
Stability:	Stable

SAFETY DATA SHEET

SECTION 10: STABILITY AND REACTIVITY

Conditions to Avoid:	Excessive heat and fire.
Stability:	Stable.
Hazardous Decomposition:	Under fire conditions carbon dioxide, carbon monoxide, chlorine, fluorine, hydrogen chloride, and hydrogen fluoride can be formed.
Hazardous Polymerization:	Will not occur.

SECTION 11: TOXICOLOGICAL INFORMATION

EYE: Practically non-irritating to the eyes.

SKIN CONTACT: Practically non-irritating to the skin. May cause slight skin irritation with prolonged or repeated contact. Skin sensations such as rashes, numbing, burning, or tingling may occur in certain individuals. These skin sensations are reversible and usually subside within 12 hours.

SKIN ABSORPTION: The acute dermal toxicity is considered to be low. The dermal LD₅₀ for rabbits is greater than 5050 mg/kg.

INGESTION: The acute oral toxicity is considered to be moderate. The oral LD₅₀ for female rats is 310 mg/kg. Small amounts that might be swallowed incidental to normal handling operations are not likely to cause injury; however, swallowing larger amounts may cause serious injury, even death.

INHALATION: The acute inhalation toxicity is considered to be low. The inhalation LC₅₀ for rats is greater than 2.65 mg/l for 4 hours.

SYMPTOMS: Symptoms of excessive exposure by oral and inhalation routes include bleeding from the nose, tremors, and convulsions.

SYSTEMIC (OTHER TARGET ORGAN) EFFECTS: Excessive exposure may produce effects on the nervous system such as tremors and convulsions, however, this product does not cause delayed neurotoxicity. Other laboratory reports indicate effects on the mucous membranes based on bloody discharge from the nose.

CANCER INFORMATION: Chronic feeding studies with bifenthrin in laboratory animals resulted in a slight increase in the incidence of urinary bladder tumors at the highest dose tested in male mice. These results were considered as equivocal and not a clear compound-related effect. The doses that produced this oncogenic effect in laboratory animals, greatly exceeds human exposure levels for the recommended use of this product. Consequently, the oncogenic potential in humans is extremely weak or non-existent. Bifenthrin is not classified as a carcinogen by IARC, NTP, OSHA, and ACGIH. The EPA has classified



SAFETY DATA SHEET

SECTION 11: TOXICOLOGICAL INFORMATION (CONT'D)

bifenthrin as a Group C possible human carcinogen based on the limited evidence of carcinogenicity in animals and in the absence of human data.

TERATOLOGY (BIRTH DEFECTS): The active ingredient in this product did not cause birth defects in laboratory animal studies.

REPRODUCTIVE EFFECTS: Bifenthrin did not interfere with fertility in animal reproduction studies.

MUTAGENICITY (EFFECTS ON GENETIC MATERIAL): Based on a number of *in vivo* and *in vitro* studies, it was concluded that the active ingredient in this product are not mutagenic.

SECTION 12: ECOLOGICAL INFORMATION

ENVIRONMENTAL SUMMARY: This pesticide is extremely toxic to fish and aquatic invertebrates. To protect the environment, do not allow pesticide to enter or run off into storm drains, drainage ditches, gutters or surface waters. Applying this product in calm weather when rain is not predicted for the next 24 hours will help to ensure that wind or rain does not blow or wash pesticide off the treatment area. Rinsing application equipment over the treated area will help avoid run off to water bodies or drainage systems.

This product is highly toxic to bees exposed to direct treatment or residues on blooming crops or weeds. Do not apply this product or allow to drift to blooming crops if bees are visiting the treatment area.

PHYSICAL ENVIRONMENTAL PROPERTIES: Bifenthrin is moderately stable in soil under aerobic conditions and at a wide range of pH with a half-life ranging from 65 to 125 days depending on the soil type. Bifenthrin has a high Log Pow that is greater than 6, it has an affinity to bind with organic matter, and it is not mobile in soils; consequently, it is not likely to contaminate ground water. There is a potential for bifenthrin to bioaccumulate, with it having a bioaccumulation factor of 11,750.

ENVIRONMENTAL TOXICOLOGY: Bifenthrin is highly toxic to fish and aquatic arthropods, with LC₅₀ values ranging from 0.0038 to 17.8 µg/L. In general, aquatic arthropods are the most sensitive species. Bifenthrin has no effect on mollusks at its limit of water solubility. Exercise extreme care to avoid contamination of aquatic environments. Bifenthrin is only slightly toxic to both water fowl and upland game birds with LD₅₀ values ranging from 1,800 mg/kg to > 2,150 mg/kg.



SAFETY DATA SHEET

SECTION 13: DISPOSAL CONSIDERATIONS

Pesticide Disposal: Pesticide wastes are toxic. Do not contaminate water, food, or feed by storage or disposal. Improper disposal of excess pesticide, spray mixture, or rinsate is a violation of Federal Law. Dispose of excess or waste pesticide by use according to label directions, or contact your State Pesticide or Environmental Control Agency, or the Hazardous Waste representative at the nearest EPA Regional Office for guidance.

Container Handling: Plastic Container: Nonrefillable Container. Do not reuse or refill container. Offer for recycling or reconditioning if available, or puncture and dispose of in a sanitary landfill, or incineration, or if allowed by state and local authorities, by burning. If burned, stay out of smoke. Triple rinse or pressure rinse container (or equivalent) promptly after emptying. Triple rinse as follows:

Containers 5 gallons or less: Empty the remaining contents into application equipment or a mix tank and drain for 10 seconds after the flow begins to drip. Fill the container $\frac{1}{4}$ full with water and recap. Shake for 10 seconds. Pour rinsate into mix tank or store rinsate for later use or disposal. Drain for 10 seconds after the flow begins to drip. Repeat this procedure two more times. Once cleaned, offer for recycling if available.

Containers larger than 5 gallons: Empty the remaining contents into application equipment or a mix tank. Fill the container $\frac{1}{4}$ full with water. Replace and tighten closures. Tip container on its side and roll back and forth, ensuring at least one complete revolution, for 30 seconds. Stand the container on its end and tip back and forth several times. Turn the container over onto its other end and tip it back and forth several times. Empty the rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Repeat this procedure two more times. Once cleaned, offer for recycling or reconditioning if appropriate.

Pressure rinse as follows (all sizes): Empty the remaining contents into application equipment or a mix tank and continue to drain for 10 seconds after the flow begins to drip. Hold container upside down over application equipment or mix tank or collect rinsate for later use for disposal. Insert pressure rinsing nozzle in the side of the container, and rinse at about 40 PSI for at least 30 seconds. Drain for 10 seconds after the flow begins to drip.

Refillable Container. Refill this container with pesticide only. Do not reuse this container for any other purpose. Cleaning the container before final disposal is the responsibility of the person disposing of the container. Cleaning before refilling is the responsibility of the refiller.

To clean the container before final disposal, empty the remaining contents from the container into application equipment or mix tank. Fill the container about 10 percent full with water. Agitate vigorously or recirculate water with pump for 2 minutes. Pour or pump rinsate into application equipment or rinsate collection system. Repeat this rinsing process two more times.



SAFETY DATA SHEET

SECTION 14: TRANSPORTATION INFORMATION

U.S. SURFACE FREIGHT CLASS: This product is not subject to DOT regulations as a hazardous material when shipped in non-bulk packages.

OTHER SHIPPING INFORMATION: This product is not regulated for transport in the USA when shipped via highway or railroad in non-bulk packages. Describe using the "U.S. Surface Freight Class" above, which applies in all cases.

SPECIAL NOTE: The following applies to shipments over water, and shipments in bulk packages:

PROPER SHIPPING NAME: Environmentally hazardous substance, liquid, n.o.s. (bifenthrin 7.9%)

HAZARD CLASS OR DIVISION: 9

IDENTIFICATION NUMBER: UN 3082

PACKING GROUP: III

MARINE POLLUTANT: Bifenthrin is a severe marine pollutant

SECTION 15: REGULATORY INFORMATION

FIFRA INFORMATION:

This chemical is a pesticide product registered by the Environmental Protection Agency and is subject to certain labeling requirements under Federal pesticide law. These requirements differ from the classification criteria and hazard information required for safety data sheets, and for the workplace labels of non-pesticide chemicals. The following is the hazard information as required on the pesticide label:

CAUTION: Harmful if swallowed, inhaled, or absorbed through skin. Causes moderate eye irritation. Avoid contact with skin, eyes or clothing. Avoid breathing spray mist. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco or using the toilet. Remove contaminated clothing and wash before reuse.

SARA 313 INFORMATION: This product contains the following substances subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372:

CHEMICAL NAME	CAS NUMBER	CONCENTRATION
Bifenthrin	82657-04-3	7.9%



SAFETY DATA SHEET

SECTION 15: REGULATORY INFORMATION (CONT'D)

SARA HAZARD CATEGORY: This product has been reviewed according to the EPA "Hazard Categories" promulgated under Sections 311 and 312 of the Superfund Amendment and Reauthorization Act of 1986 (SARA Title III) and is considered, under applicable definitions, to meet the following categories:

- An immediate health hazard
- A delayed health hazard

TOXIC SUBSTANCES CONTROL ACT (TSCA): All ingredients are on the TSCA inventory or are not required to be listed on the TSCA inventory.

OSHA HAZARD COMMUNICATION STANDARD: This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

COMPREHENSIVE ENVIRONMENTAL RESPONSE COMPENSATION AND LIABILITY ACT (CERCLA, or SUPERFUND): This product contains the following substance(s) listed as "Hazardous Substances" under CERCLA which may require reporting of releases:

Category:

Chemical Name	CAS Number	RQ	% in Product
Bifenthrin	82657-04-3	not listed	7.9%

SECTION 16: OTHER INFORMATION

SDS Date: May 5, 2015

This document is prepared pursuant to the OSHA Hazard Communication Standard (HCS) (29 CFR 1910.1200(g)), revised in 2012. In addition, other substances not "Hazardous" per this OSHA Standard may be listed. Where proprietary ingredient shows, the identity may be made available as provided in this standard.

NOTICE: The information herein is presented in good faith and believed to be accurate as of the effective date shown above. However, no warranty, expressed or implied, is given. Regulatory requirements are subject to change and may differ from one location to another; it is the buyer's responsibility to ensure that its activities comply with federal, state, and local laws and regulations. See SDS for health and safety information.

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FOR CHEMICAL EMERGENCY, SPILL, LEAK, FIRE, EXPOSURE OR ACCIDENT, CALL CHEMTREC - DAY OR NIGHT 1-800-424-9300

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

FORMULATED FOR:

LOVELAND PRODUCTS, INC.
P.O. Box 1286 • Greeley, CO 80632-1286

24-Hour Emergency Phone: 1-800-424-9300
Medical Emergencies: 1-866-944-8565
U.S. Coast Guard National Response Center: 1-800-424-8802

PRODUCT NAME: DIMETHOATE 400
CHEMICAL NAME: Dimethoate: (O,O-Dimethyl S-[methylcarbamoylmethyl] phosphorodithioate
CHEMICAL FAMILY: Organophosphate Insecticide – GROUP 1B INSECTICIDE
EPA REG. NO.: 34704-207
SDS Number: 000207-14-LPI MSDS Revisions: Secs. 1, 2, 3, 4, 5, 7, 8, 12 Date of Issue: 02/13/14

Supersedes: 08/19/13

2. HAZARDS IDENTIFICATION SUMMARY

KEEP OUT OF REACH OF CHILDREN – WARNING - AVISO – Si usted no entiende la etiqueta, busque a alguien para que se la explique a usted en detalle (If you do not understand the label, find someone to explain it to you in detail.) May be fatal if swallowed. Causes substantial but temporary eye injury. Do not get in eyes, on clothing. Harmful if absorbed through skin. Avoid contact with skin. Wear protective eyewear (goggles, face shield, or safety glasses). Wash hands before eating, drinking, chewing gum, using tobacco, or using tobacco. Remove clothing/PPE immediately if pesticide gets inside.

This product is clear light amber to yellow liquid with a solvent and slight mercaptan odor.

3. COMPOSITION, INFORMATION ON INGREDIENTS

Chemical Ingredients:	Percentage by Weight:	CAS No.	TLV® (Units)
Dimethoate	43.50	60-51-5	not listed
Cyclohexanone	38.72	108-94-1	50 ppm
Inert Ingredients*	17.78		

(*Contains ingredients that are hazardous according to the OSHA Hazard Communication Standard (29 CFR 1910.1200)

4. FIRST AID MEASURES

If swallowed: Call a poison control center or doctor immediately for treatment advice. Do not give any liquid to the person. Do not induce vomiting unless told to do so by a poison control center or doctor. Do not give anything by mouth to an unconscious person.

If in eyes: Hold eye open and rinse slowly and gently with water for 15 to 20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Call a poison control center or doctor for treatment advice.

If on skin or clothing: Take off contaminated clothing. Rinse skin immediately with plenty of water for 15 to 20 minutes. Call a poison control center or doctor for treatment advice.

If inhaled: Move person to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably by mouth-to-mouth, if possible. Call a poison control center or doctor for treatment advice.

FOR A MEDICAL EMERGENCY INVOLVING THIS PRODUCT CALL: **1-866-944-8565**. Have the product label or container with you when calling a poison control center or doctor, or going for treatment.

Note to Physician: Contains petroleum distillate. Vomiting may cause aspiration pneumonia. Contains an organophosphate that inhibits cholinesterase. Atropine is antidotal only if symptoms of cholinesterase inhibition are present. Pralidoxime chloride (2-PAM; PROTOPAM chloride) may be effective as an adjunct to atropine. Use according to label directions.

5. FIRE FIGHTING MEASURES

FLASH POINT (°F/Test Method): 121°F / 49.4°C (PMCC)

FLAMMABLE LIMITS (LFL & UFL): None established

EXTINGUISHING MEDIA: Dry chemical, carbon dioxide, foam, water spray or fog.

HAZARDOUS COMBUSTION PRODUCTS: Oxides of sulfur, phosphorus-containing compounds, carbon monoxide and other unknown hazardous materials may be formed.

SPECIAL FIRE FIGHTING PROCEDURES: Wear self-contained breathing apparatus with full protective clothing. Fight fire from upwind and keep all non-essential personnel out of area.

UNUSUAL FIRE AND EXPLOSION HAZARDS: If water is used to fight fire and cool the containers, contain run-off by diking to prevent contamination of water supplies. Containers in fire may burst or explode from excessive heat.

6. ACCIDENTAL RELEASE MEASURES

STEPS TO BE TAKEN IF MATERIAL IS RELEASED OR SPILLED:

For small spills, absorb with an absorbent material such as pet litter. Sweep up and transfer to containers for possible land application according to label use or for proper disposal. Wash the spill with water containing a strong detergent, absorb with pet litter or other absorbent material, sweep up and place in a chemical container and handle in an approved manner. Check local, state and federal regulations for proper disposal. Flush the area with water to remove any residue. For large spills: contain liquid by diking the area, keep product out of water supplies. If possible, use a pump to pick up liquid, then use absorbent material to absorb any residual liquid. Place both in a chemical container. Flush area with a household bleach and water mixture (1:1) and then absorb the liquid as described above in small spills.

CAUTION: Keep spills and cleaning runoff out of municipal sewers and open bodies of water.

7. HANDLING AND STORAGE

HANDLING: Wash hands before eating, drinking, chewing gum, using tobacco or using the toilet. Personnel should use clothing and equipment as outlined below when handling open containers. Remove clothing/PPE immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing. Remove PPE immediately after handling this product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.

STORAGE: Combustible. Do not use or store the product near heat or open flame. Do not store below temperature of 45°F / 7.2°C. Store in safe manner. Store in original container only. Keep container tightly closed when not in use. Reduce stacking height where local conditions can affect package strength. Personnel should use clothing and equipment listed under "PRECAUTIONARY STATEMENT" on the product label when handling open containers. Do not contaminate water, food or feed by storage or disposal.

Personal Protective Equipment: Mixers, loaders, applicators, flaggers, and other handlers must wear: Long-sleeved shirt and long pants, shoes plus socks, chemical-resistant gloves, protective eyewear (goggles, face shield, or safety glasses), a NIOSH-approved dust mist filtering respirator with MSHA/NIOSH approval number prefix TC-21C or a NIOSH-approved respirator with any R, P, or HE filter, chemical-resistant apron when mixing, loading, cleaning up spills, or equipment. **User Safety Requirements:** Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables exist, use detergent and hot water. Keep and wash PPE separately from other laundry. Discard clothing and other absorbent materials that have been drenched or heavily contaminated with this product's concentrate. Do not reuse them.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

ENGINEERING CONTROLS: Mixers and loaders supporting aerial application to alfalfa, cotton, soybeans, corn, safflower, sorghum, and wheat must use a closed system that meets the requirements listed in the Worker Protection Standard (WPS) for agricultural pesticides [40 CFR 170.240(d)(4)]. The system must be capable of removing the pesticide from the shipping container and transferring it into mixing tanks and/or application equipment. At any disconnect point, the system must be equipped with a dry disconnect or dry couple shut-off device that is warranted by the manufacturer to minimize drippage to no more than 2 ml per disconnect. **In addition, mixers and loaders must:** wear the personal protective equipment required on the product labeling for mixers / loaders, except no respirator is required; wear protective eyewear, if the system operates under pressure; and be provided and have immediately available for use in an emergency, such as a broken package, spill, or equipment breakdown, chemical resistant footwear and a respirator of the type specified in the PPE section of the labeling and this safety data sheet. Pilots must use an enclosed cockpit that meets the requirements listed in the Worker Protection Standard (WPS) for agricultural pesticides [40 CFR 170.240(d)(6)]. Pilots need not wear the PPE required in this labeling for applicators, but must wear at least a long-sleeve shirt, long pants, shoes, and socks. When handlers use closed systems, or enclosed cabs in a manner that meets the requirements listed in the Worker Protection Standard (WPS) for agricultural pesticides (40 CFR 170.240(d)(4-5)), the handler PPE requirements may be reduced or modified as specified in the WPS.

RESPIRATORY PROTECTION: Not normally required, if vapors or mists exceed acceptable levels, wear a NIOSH approved pesticide respirator with cartridges for pesticide vapors.

EYE PROTECTION: Chemical goggles or shielded safety glasses.

SKIN PROTECTION: Wear protective clothing: long-sleeved shirts and pants, hat, rubber boots with socks. Wear rubber or chemical-resistant gloves.

	OSHA PEL 8 hr TWA	ACGIH TLV-TWA
Cyclohexanone	50 ppm	50 ppm (Skin)
Xylene	100 ppm	100 ppm
Cumene	50 ppm (Skin)	50 ppm
Trimethylbenzene	not listed	25 ppm

9. PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE AND ODOR: Clear, light amber to yellow liquid with solvent and mild mercaptan odor. **SOLUBILITY:** Emulsifies

SPECIFIC GRAVITY (Water = 1): 1.0709 – 1.09 g/ml **BULK DENSITY:** 8.94 - 9.10 lbs/gal. **pH:** 3.59 (5% solution)

VAPOR PRESSURE: Not established **BOILING POINT:** Not established

PERCENT VOLATILE (by volume): Not established **EVAPORATION RATE:** Not established

Note: These physical data are typical values based on material tested but may vary from sample to sample. Typical values should not be construed as a guaranteed analysis of any specific lot or as specification items.

10. STABILITY AND REACTIVITY

STABILITY: Stable

CONDITIONS TO AVOID: Excessive heat and ignition sources.

INCOMPATIBILITY: Strong oxidizers, acids and bases.

HAZARDOUS DECOMPOSITION PRODUCTS: Thermal decomposition – oxides of sulfur, oxides of nitrogen, phosphorus-containing compounds and other unknown hazardous materials may be formed in a fire situation. Incomplete combustion may lead to formation of carbon monoxide and/or other asphyxiants.

HAZARDOUS POLYMERIZATION: Will not occur.

11. TOXICOLOGICAL INFORMATION

Acute Oral LD₅₀ (rat): 425 mg/kg**Eye Irritation (rabbit):** Substantial but temporary eye injury**Inhalation LC₅₀ (rat):** >5.34 mg/L (4 hr).**Carcinogenic Potential:** None listed in OSHA, NTP, IARC or ACGIH**Acute Dermal LD₅₀ (rabbit):** 2020 mg/kg**Skin Irritation (rabbit):** Slight irritant**Skin Sensitization (guinea pig):** Not established.

12. ECOLOGICAL INFORMATION

This product is toxic to wildlife and aquatic invertebrates. This product is highly toxic to bees and other pollinators exposed to direct treatment or residues on blooming crops or weeds if bees or other pollinating insects are foraging in the treatment area. Do not apply directly to water, or to areas where surface water is present or to intertidal areas below the mean high water mark. Do not contaminate water when disposing of equipment washwater or rinsate.

Dimethoate is known to leach through soil into ground water under certain conditions as a result of label use. Use of this chemical in areas where soils are permeable, particularly where the water table is shallow, may result in ground-water contamination. This product may contaminate water through drift of spray in wind. This product has a high potential for runoff for several days after application. Poorly draining soils and soils with shallow water tables are more prone to produce runoff that contains this product.

A level, well maintained vegetative buffer strip between areas to which this product is applied and surface water features such as ponds, streams, and springs will reduce the potential for contamination of water from rainfall-runoff. Runoff of this product will be reduced by avoiding applications when rainfall is forecasted to occur within 48 hours.

13. DISPOSAL CONSIDERATIONS

PESTICIDE DISPOSAL: Pesticide wastes are acutely hazardous. Improper disposal of excess pesticide, spray mixture, or rinsate is a violation of Federal law. If these wastes cannot be disposed of by use according to label instructions, contact your State Pesticide or Environmental Control Agency, or the Hazardous Waste representative at the nearest EPA Regional Office for guidance.

CONTAINER HANDLING:

Nonrefillable container: Do not reuse this container to hold materials other than pesticides or dilute pesticides (rinsate). After emptying and cleaning, it may be allowable to temporarily hold rinsate or other pesticide-related materials in the container. Contact your state regulatory agency to determine allowable practices in your state. Once cleaned, some agricultural plastic pesticide containers can be taken to a container collection site or picked up for recycling. To find the nearest site, contact your chemical dealer or manufacturer, or contact The Agricultural Container Recycling Council (ACRC) at www.acrcycle.org. If not recycled, then puncture and dispose of in a sanitary landfill, or incineration, or if allowed by state and local authorities, by burning. If burned, stay out of smoke. Triple rinse or pressure rinse container (or equivalent) promptly after emptying. **(For packages up to 5 gallons): Triple rinse as follows:** Empty the remaining contents into application equipment or a mix tank and drain for 10 seconds after the flow begins to drip. Fill the container 1/4 full with water and recap. Shake for 10 seconds. Pour rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Drain for 10 seconds after the flow begins to drip. Repeat this procedure two more times. **Pressure rinse as follows:** Empty the remaining contents into application equipment or a mix tank and continue to drain for 10 seconds after the flow begins to drip. Hold container upside down over application equipment or mix tank or collect rinsate for later use or disposal. Insert pressure rinsing nozzle in the side of the container, and rinse at about 40 PSI for at least 30 seconds. Drain for 10 seconds after the flow begins to drip. **(For packages greater than 5 gallons or 50 lbs.): Triple rinse as follows:** Empty the remaining contents into application equipment or a mix tank. Fill the container 1/4 full with water. Replace and tighten closures. Tip container on its side and roll it back and forth, ensuring at least one complete revolution, for 30 seconds. Stand the container on its end and tip it back and forth several times. Turn the container over onto its other end and tip it back and forth several times. Empty the rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Repeat this procedure two more times. **Pressure rinse as follows:** Empty the remaining contents into application equipment or a mix tank and continue to drain for 10 seconds after the flow begins to drip. Hold container upside down over application equipment or mix tank or collect rinsate for later use or disposal. Insert pressure rinsing nozzle in the side of the container, and rinse at about 40 PSI for at least 30 seconds. Drain for 10 seconds after the flow begins to drip. **(For square bottom caged totes greater than 55 gals.): Triple rinse or pressure rinse as follows:** Empty the remaining contents into application equipment or a mix tank and continue to drain for 10 seconds after the flow begins to drip. Fill the container about 1/4 full with water, rinsing down all sides inside the container thoroughly. Recirculate water with the pump for 2 minutes. Empty the rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Repeat this procedure two more times. **(For refillable containers):** Refill this container with pesticide only. Do not reuse this container for any other purpose. Cleaning the container before final disposal is the responsibility of the person disposing of the container. Cleaning before refilling is the responsibility of the refiller. To clean the container before final disposal, empty the remaining contents from this container into application equipment or mix tank. Fill the container about 10 percent full with water. Agitate vigorously or recirculate water with the pump for 2 minutes. Pour or pump rinsate into application equipment or rinsate collection system. Repeat this rinsing procedure two more times.

14. TRANSPORT INFORMATION

DOT Shipping Description: RQ UN3017, ORGANOPHOSPHORUS PESTICIDE, LIQUID, TOXIC, FLAMMABLE, (DIMETHOATE, CYCLOHEXANONE) 6.1, (3), III ERG GUIDE 131

U.S. Surface Freight Classification: INSECTICIDES OR FUNGICIDES, INSECT OR ANIMAL REPELLENTS, NOI, OR VERMIN EXTERMINATORS, ANIMAL OR POULTRY, NOI; POISON (NMFC 102100; CLASS 77.5)

Consult appropriate ICAO/IATA and IMDG regulations for shipment requirements in the Air and Maritime shipping modes.

15. REGULATORY INFORMATION

NFPA & HMIS Hazard Ratings:

NFPA

2	Health	0	Least
2	Flammability	1	Slight
1	Instability	2	Moderate
		3	High
		4	Severe

HMIS

2	Health
2	Flammability
1	Reactivity
G	PPE

SARA Hazard Notification/Reporting

SARA Title III Hazard Category:

Immediate	<u>Y</u>	Fire	<u>Y</u>	Sudden Release of Pressure	<u>N</u>
Delayed	<u>Y</u>	Reactive	<u>N</u>		

Reportable Quantity (RQ) under U.S. CERCLA: Dimethoate (CAS: 60-51-5): 10 pounds; Cyclohexanone (CAS: 108-94-1) 5000 pounds

SARA, Title III, Section 313: Dimethoate (CAS: 60-51-5) 43.5%; 1,2,4 Trimethylbenzene (CAS: 95-63-6) 3.2% maximum; Xylene (CAS: 1330-20-7) 0.3% maximum; Cumene (CAS: 98-82-8) 0.2% maximum

SARA, Title III, Section 302: Threshold Planning Quantity: 500/10000 pounds

RCRA Waste Code: P044

CA Proposition 65: Not listed.

WARNING – This chemical is a pesticide product registered by the United States Environmental Protection Agency and is subject to certain labeling requirements under federal pesticide law. These requirements differ from the classification criteria and hazard information required for safety data sheets (SDS), and for workplace labels of non-pesticide chemicals.

16. OTHER INFORMATION

MSDS STATUS: Sections 1, 2, 3, 4, 5, 7, 8, and 12 revised

PREPARED BY: Registrations and Regulatory Affairs

REVIEWED BY: Environmental Health and Safety

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Safety Data Sheet

Section 1 – Product Identification

Product Name:	Malathion 57%	EPA Registration #:	67760-40-53883
Manufacturer:	Control Solutions Inc. 5903 Genoa- Red Bluff Pasadena, TX 77507 281-892-2500	EPA Establishment #:	53883-TX-002
Recommended Usage:	Apply only as directed by product label.		
Restrictions:	Refer to product label for usage restrictions.		

Section 2 – Hazard Identification

Health:	Malathion is a cholinesterase inhibitor. Neurotoxic effects include staggering gait, muscle tremors, convulsions, and neuropathy. See section 10 for more information.
Environmental:	Malathion is very toxic to aquatic environments. See section 11 for more information.
Physical:	Combustible liquid.
Unclassified:	None.
GHS Classification:	Environmental toxicity: Acute aquatic, Category 1 (severe) Flammable liquid: Category 3 (moderate) Eye irritation: Category 2b (mild)

Section 3 – Chemical Composition

Material	CAS #	% by Weight	OSHA PEL
Malathion	121-75-5	57%	15 mg/m ³
Inert Ingredients	-	43%	Petroleum distillates 2000 mg/m ³

Section 4 – First Aid

IF SWALLOWED	Immediately call a poison control center or doctor. Do not induce vomiting unless told to by a poison control center or doctor. Do not give any liquid to the person. Do not give anything by mouth to an unconscious person.
IF INHALED	Move person to fresh air. If person is not breathing, call 911 or ambulance, then give artificial respiration, preferably mouth-to-mouth, if possible. Call a poison control center or doctor for further treatment advice.
IF ON SKIN OR CLOTHING	Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call a poison control center for treatment advice if irritation persists.
IF IN EYES:	Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye.

Call a poison control center or doctor for treatment advice.

Notes/Physician's Information: Malathion is a cholinesterase inhibitor affecting the central and peripheral nervous systems and producing cardiac and respiratory depression. Antidote: Administer atropine sulphate in large doses, TWO to FOUR mg intravenously or intramuscularly as soon as cyanosis is overcome. Repeat at 5 to 10 minute intervals until signs of atropinization appear. 2-PAM chloride is a pharmacological antidote and may be administered as an adjunct to, but not a substitute for, atropine, which is a symptomatic and often lifesaving antidote. DO NOT GIVE MORPHINE OR TRANQUILIZERS. At first sign of pulmonary edema, the patient should be given supplemental oxygen and treated symptomatically. Continued absorption of malathion may occur and relapse may occur after initial improvement. VERY CLOSE SUPERVISION OF THE PATIENT IS INDICATED FOR AT LEAST 48 HOURS. Contains Petroleum Distillate. May pose an aspiration pneumonia hazard.

Section 5 – Firefighting Measures

Flash Point: Not applicable.
Extinguishing Media: Water fog, CO₂, foam, dry chemical.
Procedures: Use self-contained breathing apparatus. Cool fire exposed areas and equipment.
Unusual Fire Hazards: Chemical fires have potential to emit hazardous decomposition products. Refer to **Section 10** for more information.

Section 6 – Accidental Release Measures

Absorbent Materials: Universal absorbent pads, vermiculite, absorbent booms, or clay granules.
Containment: Do not discharge into municipal wastewater or public storm drains. Eliminate runoff as much as possible.
Waste Disposal: Sweep contaminated absorbent material into suitable container. Seal container and dispose of all contaminated waste material in municipal land-fill or through licensed TSDF. Open dumping is prohibited. Whole material is considered an ignitable hazardous waste: waste code D001.
Reporting: Report all major spills and uncontrolled releases to proper local, state, and federal agencies.
Emergency Contact #: Chemtrec: 1-800-424-9300

Section 7 – Handling and Storage Instructions

Storage Conditions: Store upright at room temperature. Avoid exposure to extreme temperatures. Do not store near heat or open flame. Store away from foodstuffs, feed, and children.
Special Handling Considerations: Avoid dermal contact. Take precautions to avoid damaging containers. Avoid cross contamination. Always wash hands thoroughly after handling pesticides and before eating, drinking, or smoking. Clean water should be available to rinse eyes and skin in case of chemical exposure.

Section 8 – Engineering Controls and Protective Equipment

Engineering Controls:	Use only in adequately ventilated areas.
Eye Protection:	ANSI approved goggles or safety glasses with side shields are recommended.
Respiratory Protection:	Use NIOSH or MSHA approved P-class filtering face piece (dust mask) or air purifying respirator with p-class cartridges to minimize aerosol inhalation in areas with inadequate ventilation.
Dermal Protection:	Chemical resistant gloves, pants, long sleeves, shoes and socks.
Other Precautions:	Wash thoroughly after handling. Remove and wash clothing before reuse.

Section 9 – Physical and Chemical Properties

Odor:	Mercaptan (skunk-like) odor.	Melting Point:	Not determined.
Physical State:	Liquid	Flash Point:	See Section 10.
Color:	Light amber, yellow	Specific Gravity:	0.958 (g/ml)
Bulk Density:	8.91 (lbs/gal)	pH:	5.50 – 6.50
Vapor Pressure:	Not determined.	Water Solubility:	Dispersible.
Viscosity:	Not determined.	Refractive Index:	Not determined.

Section 10 – Stability and Reactivity

Flash Point:	67°C (152.6 F)
Lower Flammability Limit:	Not determined.
Upper Flammability Limit:	Not determined.
Hazardous Polymerization:	Will not occur.
Decomposition Products:	May release irritating and toxic gases due to thermal decomposition. Products of combustion include CO, and CO ₂ .
Conditions to Avoid:	Stable under normal storage conditions. Avoid exposure to extreme temperatures.
Incompatible Materials:	Strong oxidizers.

Section 11 – Toxicity and Symptoms of Overexposure

Routes of Exposure:	Dermal, eye, inhalation, ingestion.
Skin Contact:	Slight irritant. Symptoms reversible within 72 hrs.
Eye Contact:	Irritant. May cause redness and tearing. Symptoms reversible within 7 days.
Ingestion:	Ingestion may induce neurotoxic symptoms including diarrhea, salivation, tremors, convulsions, hyperactivity and hypersensitivity to touch or sound.
Inhalation:	May cause nasal and respiratory tract irritation.
Oral LD ₅₀ :	>4000 mg/kg
Dermal LD ₅₀ :	>2000 mg/kg
Inhalation LC ₅₀ :	>5 mg/L
Carcinogenicity:	IARC: Group 3 (not carcinogenic).
Teratogenicity:	Not a teratogen.
Embryo toxicity:	None.
Reproductive Effects:	None.

Mutagenicity: None.
Other Chronic Effects: Animal studies suggest malathion may cause various disruptions of the endocrine system at high dosages.

Section 12 – Ecological Data*

Aquatic: LC₅₀: 0.2 mg/L (rainbow trout).
(malathion)
Avian: LD₅₀: 400 mg/kg (bobwhite quail).
(malathion)
Bioaccumulation: Unlikely to bioaccumulate.

Section 12 – Ecological Data* (continued from page 3)

Environmental Fate: Reported half-lives in soil range from 1 to 17 days. Malathion is considered to be very mobile in most soil types, including sand, loam, sandy loam, and silt loam soils
Summary: This pesticide is toxic to fish, aquatic invertebrates, and aquatic life stages of amphibians. For terrestrial uses, do not apply directly to water, to areas where surface water is present or to intertidal areas below the mean high water mark.

Section 13 – Disposal Considerations*

Pesticide Disposal: Pesticide, spray mixture or rinse water that cannot be used according to label instructions must be disposed of at or by an approved waste disposal facility.☐

Container Disposal: **For Containers equal to or less than 5 Gallons:** Nonrefillable container. Do not reuse or refill this container. Clean container promptly after emptying. Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank and drain for 10 seconds after the flow begins to drip. Fill the container ¼ full with water and recap. Shake for 10 seconds. Pour rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Drain for 10 seconds after the flow begins to drip. Repeat this procedure two more times. Offer for recycling if available. If recycling is not available: then dispose of container in a sanitary landfill or, if allowed by State and local authorities, by burning. If burned, stay out of smoke.

For Containers greater than 5 Gallons: Nonrefillable container. Do not reuse or refill this container. Clean container promptly after emptying. Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank. Fill the container 1/4 full with water. Replace and tighten closures. Tip container on its side and roll it back and forth, ensuring at least one complete revolution, for 30 seconds. Stand the container on its end and tip it back and forth several times. Turn the container over onto its other end and tip it back and forth several times. Empty the rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Repeat this procedure two more times. Offer for recycling if available. If recycling is not

available: then dispose of container in a sanitary landfill or, if allowed by State and local authorities, by burning. If burned, stay out of smoke.

For Bulk containers: (Refillable Container) Refill this container with pesticides only. Do not reuse this container for any other purpose. Cleaning the container before final disposal is the responsibility of the person disposing of the container. Cleaning before refilling is the responsibility of the re-filler. To clean the container before final disposal, empty the remaining contents from this container into application equipment or mix tank. Fill the container about 10 percent full with water. Agitate vigorously or re-circulate water with the pump for 2 minutes. Pour or pump rinsate into application equipment or rinsate collection system. Repeat this procedure two more times.

Section 14 – Transportation*

DOT:	Non bulk: not regulated. Bulk: RQ, UN1993, flammable liquid, n.o.s. (contains petroleum distillates, 57% malathion), Class 3, PG III, marine pollutant
IATA:	UN1993, flammable liquid, n.o.s. (contains petroleum distillates, 57% malathion), Class 3, PG III
IMDG:	UN1993, flammable liquid, n.o.s. (contains petroleum distillates, 57% malathion), Class 3, PG III, marine pollutant

Section 15 – Regulatory*

Section 302/TPQ: (emergency planning)	Not regulated under section 302.
Section 304/EHS RQ: (release notification)	Not regulated under section 304.
CERCLA RQ: (release notification)	Malathion RQ = 100 lbs (175 lbs as a mixture)
Section 311/Tier II: (MSDS submission)	Fire hazard. Acute health hazard. Chronic health hazard.
Section 313/TRI Chemicals:	Malathion - CAS #: 121-75-5
RCRA Haz-Waste Code(s):	Free liquid: D001, Ignitable.
CAA TQ: (air emissions)	Not subject to CAA.
EPA/FIFRA Toxicity Category:	II
EPA Signal Word:	WARNING
State Specific Regulations:	Not established
International Regulations:	Not established

Section 16 – Other

HMIS/NFPA Classification:	Fire - 2	Health - 1
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Reactivity - 1

Special - none

Date of Last Revision: October 14, 2011

Training Necessary: Yes.

NFPA and HMIS ratings assigned to this product are based on the hazards of its ingredient (s). Because the customer is most aware of the application of the product, he must ensure that the proper personal protective equipment (PPE) is provided consistent with information contained in the product MSDS.

DISCLAIMER

The information provided on this Material Safety Data Sheet is furnished without warranty, expressed or implied, except that it is accurate to the best knowledge of Control Solutions, Inc. The data on this sheet relates only to the specific material designated herein. Control Solutions, Inc. assumes no legal responsibility for the accuracy or completeness of this data, nor for use or reliance upon this data.

*Section is not required by 29 CFR 1910.1200 the Hazcom standard, but is provided for compliance with United Nations Globally Harmonized System (GHS).



1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Name: Mallet 75 WSP
EPA Reg. No.: 228-588
Product Type: Insecticide
Company Name: Nufarm Inc.
 11901 S. Austin Avenue
 Alsip, IL 60803
 1-800-345-3330

Telephone Numbers: For Chemical Emergency, Spill, Leak, Fire, Exposure, or Accident,
 Call CHEMTREC Day or Night: 1-800-424-9300
 For Medical Emergencies Only, Call 1-877-325-1840

This product is an EPA FIFRA registered pesticide. Some classifications on this SDS are not exactly the same as on the FIFRA label. Certain sections are superseded by federal law governed by EPA for a registered pesticide. Please see Section 15. REGULATORY INFORMATION for explanation.

2. HAZARDS IDENTIFICATION

PHYSICAL HAZARDS:

None known.

HEALTH HAZARDS:

Acute toxicity, oral	Category 4
Acute toxicity, inhalation	Category 4
Specific target organ toxicity – Repeated exposure	Category 2

ENVIRONMENTAL HAZARDS:

Hazardous to the aquatic environment, acute	Category 1
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SIGNAL WORD:

WARNING

HAZARD STATEMENTS:

Harmful if swallowed or inhaled. May cause damage to organs (heart, liver, blood chemistry, and thyroid) through prolonged or repeated exposure. Very toxic to aquatic life.



PRECAUTIONARY STATEMENTS:

Wash hands and exposed skin thoroughly after handling. Do not eat, drink or smoke when using this product. If swallowed: Call a poison center/doctor if you feel unwell. See product label and Section 4 First Aid for medical advice. Rinse mouth. Dispose of contents/container in accordance with local/regional/national/international regulations.

Avoid breathing dust/mist/vapors/spray. Use only outdoors or in a well-ventilated area. If inhaled: Remove person to fresh air and keep comfortable for breathing. Call a poison center/doctor if you feel unwell.

Do not breathe mist/vapors/spray. Get medical advice/attention if you feel unwell. Dispose of contents/container in accordance with local/regional/national/international regulations.

Avoid release to the environment. Collect spillage. Dispose of contents/container in accordance with local/regional/national/international regulations.

3. COMPOSITION / INFORMATION ON INGREDIENTS

COMPONENTS	CAS NO.	% BY WEIGHT
Imidacloprid (98%)	105827-78-9	72.75 – 77.25
Silica carrier	112926-00-8	7.09 -- 7.84
Other ingredients	Trade Secret	Trade Secret

Synonyms: 1-[(6-chloro-3-pyridinyl)methyl]-N-nitro-2-imidazolidinimine

Ingredients not precisely identified are proprietary or non-hazardous. Values are not product specifications.

4. FIRST AID MEASURES

If Swallowed: Call a poison control center or doctor immediately for treatment advice. Have person sip a glass of water if able to swallow. Do not induce vomiting unless told to do so by the poison control center or doctor. Do not give anything by mouth to an unconscious person.

If in Eyes: Hold eye open and rinse slowly and gently with water for 15 to 20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Call a poison control center or doctor for treatment advice.

If on Skin or Clothing: Take off contaminated clothing. Rinse skin immediately with plenty of water for 15 to 20 minutes. Call a poison control center or doctor for treatment advice.

Most important symptoms/effects, acute and delayed: Changes in blood chemistry, Damage to organs (heart, liver, blood chemistry, and thyroid) through prolonged or repeated exposure

Indication of immediate medical attention and special treatment if needed, if necessary: Respiratory or skin irritation. No specific antidote is available. Treat symptomatically.

5. FIRE FIGHTING MEASURES

Flash Point: Not applicable (solid).

Autoignition Temperature: Not Determined

Flammability Limits: Not Determined

Extinguishing Media: Water, carbon dioxide, dry chemical or foam.

Special Fire Fighting Procedures: Firefighters should wear NIOSH/MSHA approved self-contained breathing apparatus and full fire-fighting turn out gear. Dike area to prevent runoff and contamination of water sources. Dispose of fire control water later.

Unusual Fire and Explosion Hazards: If water is used to fight fire, contain runoff, using dikes to prevent contamination of water supplies. Dispose of fire control water later.

Hazardous Decomposition Materials (Under Fire Conditions): May produce gases such as hydrogen chloride, hydrogen cyanide, and oxides of carbon and nitrogen.

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions: Wear appropriate protective gear for the situation. See Personal Protection information in Section 8.

Environmental Precautions: Prevent material from entering public sewer systems or any waterways. Do not flush to drain. Large spills to soil or similar surfaces may necessitate removal of topsoil. The affected area should be removed and placed in an appropriate container for disposal.

Methods for Containment: Dike spill using absorbent or impervious materials such as earth, sand or clay. Collect and contain contaminated absorbent and dike material for disposal.

Methods for Cleanup and Disposal: Avoid creation of dusty conditions. If dry, sweep or scoop up material and place into container for disposal. If wet, pump any free liquid into an appropriate closed container. Decontaminate tools and equipment following cleanup. See Section 13: DISPOSAL CONSIDERATIONS for more information.

Other Information: Large spills may be reportable to the National Response Center (800-424-8802) and to state and/or local agencies.

7. HANDLING AND STORAGE

HANDLING:

Harmful if swallowed, inhaled, or absorbed through skin. Causes eye irritation. Avoid contact with skin, eyes, or clothing. Users should wash hands before eating, drinking, chewing gum, using tobacco, or using the toilet. Remove clothing/Personal Protective Equipment (PPE) immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing. If pesticide gets on skin, wash immediately with soap and water. Remove PPE immediately after handling this product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.

STORAGE:

Store in a cool, dry place and in such a manner as to prevent cross-contamination with other pesticides, fertilizers, food and feed. Store in original container and out of the reach of children, preferably in a locked storage area. Exposure to moisture or excessive handling of water-soluble packets may cause breakage. Do not contaminate water, food, or feed by storage or disposal.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Engineering Controls:

Where engineering controls are indicated by specific use conditions or a potential for excessive exposure, use local exhaust ventilation at the point of generation.

Personal Protective Equipment:

Eye/Face Protection: To avoid contact with eyes, wear chemical goggles or shielded safety glasses. An emergency eyewash or water supply should be readily accessible to the work area.

Skin Protection: To avoid contact with skin wear long pants, long-sleeved shirt, socks, shoes and chemical-resistant gloves. An emergency shower or water supply should be readily accessible to the work area.

Respiratory Protection: Not normally required. If vapors or mists exceed acceptable levels, wear NIOSH approved air-purifying respirator with cartridges/canisters approved for use against pesticides.

General Hygiene Considerations: Personal hygiene is an important work practice exposure control measure and the following general measures should be taken when working with or handling this material: 1) do not store, use and/or consume foods, beverages, tobacco products, or cosmetics in areas where this material is stored; 2) wash hands and face carefully before eating, drinking, using tobacco, applying cosmetics or using the toilet.

Exposure Guidelines:

Component	OSHA		ACGIH	
	TWA	STEL	TWA	STEL
Imidacloprid	NE	NE	NE	NE
Silica-Amorphous, precipitated	20 million particles per cubic foot*	NE	NE	NE

NE = Not Established

* 80 mg/m³/% SiO₂. See 29 CFR 1910.100 Table Z-3 Mineral Dusts

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Off-white colored powder contained in PVA (water-soluble bag)
Odor:	Slight odor
Odor threshold:	No data available
pH:	6.93 ± 0.01
Melting point/freezing point:	No data available
Initial boiling point and boiling range	No data available
Flash point:	No data available
Evaporation rate:	No data available
Flammability (solid, gas):	No data available
Upper/lower flammability or explosive limits:	No data available
Vapor pressure:	No data available
Vapor density:	No data available
Relative density:	0.424 g/ml (tapped)

Solubility(ies):	Dispersible
Partition coefficient: n-octanol/water:	No data available
Autoignition temperature:	No data available
Decomposition temperature:	No data available
Viscosity:	Not applicable

Note: Physical data are typical values, but may vary from sample to sample. A typical value should not be construed as a guaranteed analysis or as a specification.

10. STABILITY AND REACTIVITY

Reactivity: Not reactive.

Chemical Stability: This material is stable under normal handling and storage conditions.

Possibility of Hazardous Reactions: Will not occur.

Conditions to Avoid: Excessive heat. For imidacloprid, strong exothermal reaction above 200° C.

Incompatible Materials: Not known

Hazardous Decomposition Products: Under fire conditions, may produce gases such as hydrogen chloride, hydrogen cyanide, and oxides of carbon and nitrogen.

11. TOXICOLOGICAL INFORMATION

Likely Routes of Exposure: None expected due to PVA bag. Exposure may occur if torn / perforated bags are not properly handled. See Section 7 for proper handling.

Symptoms of Exposure: Non-irritating to the eye based on toxicity studies. Minimally toxic and non-irritating to the skin based on toxicity studies. Moderately toxic if ingested based on toxicity studies. Low inhalation toxicity based on toxicity studies.

Delayed, immediate and chronic effects of exposure: None known.

Toxicological Data:

Data from laboratory studies conducted on Imidacloprid Technical Grade Active Ingredient:

Oral: Rat LD₅₀: 440 mg/kg

Dermal: Rat LD₅₀: >2,000 mg/kg

Inhalation: Rat 4-hr LC₅₀: >2.05 mg/L

Eye Irritation: Rabbit: Mildly irritating

Skin Irritation: Rabbit: Slightly irritating

Skin Sensitization: Not a contact sensitizer in guinea pigs following repeated skin exposure.

Subchronic (Target Organ) Effects: Repeated overexposure to imidacloprid, may affect blood chemistry, the heart, thyroid, and liver.

Carcinogenicity / Chronic Health Effects: Prolonged overexposure to imidacloprid can cause effects to the thyroid. Imidacloprid did not cause cancer in laboratory animal studies. The U.S. EPA has given imidacloprid a Group E classification (evidence of non-carcinogenicity in humans).

Reproductive Toxicity: In a two-generation reproduction study in rats, imidacloprid produced reduced mean body weights and body weight gains. No other reproductive effects were observed.

Developmental Toxicity: Rat and rabbit studies on imidacloprid resulted in skeletal abnormalities, increased resorptions (rabbits) and reduced body weight gains at doses that were also toxic to mother animals.

Genotoxicity: The imidacloprid in vitro bacterial and in vivo animals mutagenicity studies, taken collectively, demonstrate that imidacloprid is not genotoxic or mutagenic.

Assessment Carcinogenicity: None listed with ACGIH, IARC, NTP or OSHA.

12. ECOLOGICAL INFORMATION

Environmental Hazards:

This product is toxic to aquatic invertebrates.

Ecotoxicity:

Data on the active ingredient Imidacloprid:

96-hour LC ₅₀ Rainbow Trout:	211 mg/l	Japanese Quail Oral LD ₅₀ :	31 mg/kg
48-hour EC ₅₀ Daphnia:	85 mg/l	Bobwhite Quail Oral LD ₅₀ :	152 mg/kg
96-hour LC ₅₀ Mysid:	0.038 ppm	House Sparrow Oral LD ₅₀ :	41 mg/kg
48-hour Honey Bee Contact LD ₅₀ :	0.078 µg/bee	48-hour Honey Bee Oral LD ₅₀ :	0.0039 µg/bee
Bobwhite Quail 8-day Dietary LC ₅₀ :	1535 ppm	Mallard Duck 8-day Dietary LC ₅₀ :	>4797 ppm

Environmental Fate:

Hydrolysis half-life of imidacloprid is greater than 30 days at pH 7 and 25°C. The aqueous photolysis half-life is less than 3 hours. The soil surface photolysis of imidacloprid has a half-life of 39 days, and in soil, the half-life ranged from 26 to 229 days.

13. DISPOSAL CONSIDERATIONS**Waste Disposal Method:**

Wastes resulting from the use of this product may be disposed of on site or at an approved waste disposal facility.

Container Handling and Disposal:

Nonrefillable container. DO NOT reuse or refill this container. Outer packaging for this product is secondary packaging to contain Water soluble packaging. Thoroughly rinse any soluble powder residue from container into application equipment. Then offer for recycling if available or dispose of in a sanitary landfill.

14. TRANSPORTATION INFORMATION

Follow the precautions indicated in Section 7: HANDLING AND STORAGE of this MSDS.

DOT**≤ 882 pounds per completed package**

Non-regulated – See 49 CFR 171.4(c) & 172.101 Appendix A & 173.132(b)(3)

> 882 pounds per completed package

UN 3077, Environmentally hazardous substance, solid, n.o.s., (Imidacloprid), 9, III, Marine Pollutant

IMDG

UN 3077, Environmentally hazardous substance, solid, n.o.s., (Imidacloprid), 9, III, Marine Pollutant

IATA

Non Regulated - See IATA 3.6.1.5.3

15. REGULATORY INFORMATION**EPA FIFRA INFORMATION**

This chemical is a pesticide product registered by the United States Environmental Protection Agency and is subject to certain labeling requirements under federal pesticide law. These requirements differ from the classification criteria and hazard information required for safety data sheets (SDS), and for workplace labels of non-pesticide chemicals. The hazard information required on the pesticide label is reproduced below. The pesticide label also includes other important information, including directions for use.

CAUTION. Avoid breathing dust or vapor. Wash thoroughly with soap and water after handling. Remove contaminated clothing and wash before reuse. Keep children or pets off treated area until spray is dry.

U.S. FEDERAL REGULATIONS

TSCA Inventory: This product is exempted from TSCA because it is solely for FIFRA regulated use.

SARA Hazard Notification/Reporting:**Hazard Categories Under Criteria of SARA Title III Rules (40 CFR Part 370):**

Immediate, Delayed, and Fire

Section 313 Toxic Chemical(s):

None

Reportable Quantity (RQ) under U.S. CERCLA:

None

RCRA Waste Code:

Under RCRA, it is the responsibility of the product user to determine at the time of disposal, whether a material containing the product or derived from the product should be classified as a hazardous waste.

State Information:

Other state regulations may apply. Check individual state requirements.

California Proposition 65: Not Listed.

16. OTHER INFORMATION

National Fire Protection Association (NFPA) Hazard Rating:

Rating for this product: Health: 2 Flammability: 1 Reactivity: 0

Hazards Scale: 0 = Minimal 1 = Slight 2 = Moderate 3 = Serious 4 = Severe

This Safety Data Sheet (SDS) serves different purposes than and DOES NOT REPLACE OR MODIFY THE EPA-ACCEPTED PRODUCT LABELING (attached to and accompanying the product container). This SDS provides important health, safety and environmental information for employers, employees, emergency responders and others handling large quantities of the product in activities generally other than product use, while the labeling provides that information specifically for product use in the ordinary course.

Use, storage and disposal of pesticide products are regulated by the EPA under the authority of the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) through the product labeling, and all necessary and appropriate precautionary, use, storage, and disposal information is set forth on that labeling. It is a violation of Federal law to use a pesticide product in any manner not prescribed on the EPA-accepted label.

Although the information and recommendations set forth herein (hereinafter "Information") are presented in good faith and believed to be correct as of the date hereof, Nufarm Americas Inc. makes no representations as to the completeness or accuracy thereof. Information is supplied upon the condition that the persons receiving same will make their own determination as to its suitability for their purposes prior to use. In no event will Nufarm Americas Inc. be responsible for damages of any nature whatsoever resulting from the use of or reliance upon Information. NO REPRESENTATIONS OR WARRANTIES, EITHER EXPRESS OR IMPLIED, OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR OF ANY OTHER NATURE ARE MADE HEREUNDER WITH RESPECT TO INFORMATION OR THE PRODUCT TO WHICH INFORMATION REFERS AND ALL SUCH WARRANTIES ARE HEREBY SPECIFICALLY DISCLAIMED.

Date of Issue: March 2, 2015

Supersedes: January 21, 2015



MERIT® 75 WP INSECTICIDE

Version 2 / USA
102000007120

1/11
Revision Date: 12/19/2013
Print Date: 05/04/2015

SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

Product identifier

Trade name	MERIT® 75 WP INSECTICIDE
Product code (UVP)	04399455
SDS Number	102000007120
EPA Registration No.	432-1314

Relevant identified uses of the substance or mixture and uses advised against

Use	Insecticide
Restrictions on use	See product label for restrictions.

Information on manufacturer

Bayer CropScience
2 T.W. Alexander Drive
Research Triangle PK, NC 27709
United States

Emergency telephone no.

All Emergencies, 24hr/ 7 days 1-800-334-7577

Product Information Telephone No. 1-866-99BAYER (1-866-992-2937)

SDS Information or Request SDSINFO.BCS-NA@bayer.com

SECTION 2: HAZARDS IDENTIFICATION

Classification in accordance with regulation HCS 29CFR §1910.1200

Eye irritation : Category 2B

Acute toxicity (Oral, Inhalation): Category 4



Signal word: Warning

Hazard statements

Causes eye irritation.
Harmful if swallowed.
Harmful if inhaled.

Precautionary statements

Wash thoroughly after handling.
Do not eat, drink or smoke when using this product.
Avoid breathing dust/fume/gas/mist/vapours/spray.
Use only outdoors or in a well-ventilated area.



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IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
If eye irritation persists: Get medical advice/attention.
IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell.
Rinse mouth.
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
Call a POISON CENTER or doctor/ physician if you feel unwell.
Dispose of contents/container in accordance with local regulation.

Other hazards

No other hazards known.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Hazardous Component Name	CAS-No.	Average % by Weight
Imidacloprid	138261-41-3	75.00

SECTION 4: FIRST AID MEASURES

Description of first aid measures

General advice When possible, have the product container or label with you when calling a poison control center or doctor or going for treatment.

Inhalation Move to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth if possible. Call a physician or poison control center immediately.

Skin contact Take off contaminated clothing and shoes immediately. Wash off immediately with plenty of water for at least 15 minutes. Call a physician or poison control center immediately.

Eye contact Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Call a physician or poison control center immediately.

Ingestion Call a physician or poison control center immediately. Rinse out mouth and give water in small sips to drink. DO NOT induce vomiting unless directed to do so by a physician or poison control center. Never give anything by mouth to an unconscious person. Do not leave victim unattended.

Most important symptoms and effects, both acute and delayed

Symptoms To date no symptoms are known.

Indication of any immediate medical attention and special treatment needed



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Treatment	Appropriate supportive and symptomatic treatment as indicated by the patient's condition is recommended. There is no specific antidote.
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SECTION 5: FIREFIGHTING MEASURES

Extinguishing media

Suitable	Water, Carbon dioxide (CO ₂), Foam, Dry chemical
Unsuitable	None known.

Advice for firefighters

Special protective equipment for fire-fighters	Firefighters should wear NIOSH approved self-contained breathing apparatus and full protective clothing.
---	--

Further information	Keep out of smoke. Fight fire from upwind position. Cool closed containers exposed to fire with water spray. Do not allow run-off from fire fighting to enter drains or water courses.
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Flash point	not applicable
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Autoignition temperature	no data available
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Lower explosion limit	not applicable
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Upper explosion limit	not applicable
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Explosivity	no data available
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Dust explosion class	no data available
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SECTION 6: ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Precautions	Keep unauthorized people away. Isolate hazard area. Avoid contact with spilled product or contaminated surfaces.
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Methods and materials for containment and cleaning up

Methods for cleaning up	Avoid dust formation. Sweep up or vacuum up spillage and collect in suitable container for disposal. Clean contaminated floors and objects thoroughly, observing environmental regulations.
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Additional advice	Use personal protective equipment.
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Reference to other sections	Information regarding safe handling, see section 7. Information regarding personal protective equipment, see section 8. Information regarding waste disposal, see section 13.
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SECTION 7: HANDLING AND STORAGE

Precautions for safe handling

Advice on safe handling Handle and open container in a manner as to prevent spillage. Use only in area provided with appropriate exhaust ventilation.

Hygiene measures Wash hands thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco, using the toilet or applying cosmetics.
Remove Personal Protective Equipment (PPE) immediately after handling this product. Before removing gloves clean them with soap and water. Remove soiled clothing immediately and clean thoroughly before using again. Wash thoroughly and put on clean clothing.
Contaminated work clothing should not be allowed out of the workplace. Remove contaminated clothing immediately and dispose of safely.

Conditions for safe storage, including any incompatibilities

Requirements for storage areas and containers Store in a cool, dry place and in such a manner as to prevent cross contamination with other crop protection products, fertilizers, food, and feed. Store in original container and out of the reach of children, preferably in a locked storage area.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Components	CAS-No.	Control parameters	Update	Basis
Imidacloprid	138261-41-3	0.7 mg/m3 (TWA)		OES BCS*
Imidacloprid	138261-41-3	5 ug/m3 (AN ESL)	07 2011	TX ESL
Imidacloprid	138261-41-3	50 ug/m3 (ST ESL)	07 2011	TX ESL
Sodium aluminium silicate (Respirable fraction.)	1344-00-9	1 mg/m3 (TWA)	02 2012	ACGIH
Sodium aluminium silicate (Particulate.)	1344-00-9	5 ug/m3 (AN ESL)	02 2013	TX ESL
Sodium aluminium silicate (Particulate.)	1344-00-9	50 ug/m3 (ST ESL)	02 2013	TX ESL

*OES BCS: Internal Bayer CropScience "Occupational Exposure Standard"

Exposure controls

Personal protective equipment

In normal use and handling conditions please refer to the label and/or leaflet. In all other cases the following recommendations would apply.



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Respiratory protection	When respirators are required, select NIOSH approved equipment based on actual or potential airborne concentrations and in accordance with the appropriate regulatory standards and/or industry recommendations.
Hand protection	Chemical resistant nitrile rubber gloves
Eye protection	Tightly fitting safety goggles
Skin and body protection	Wear long-sleeved shirt and long pants and shoes plus socks.
General protective measures	Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables, use detergent and warm/tepid water. Keep and wash PPE separately from other laundry.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	white to light beige
Physical State	powder
Odor	none
Odour Threshold	no data available
pH	7 (1 %) suspension in water
Vapor Pressure	no data available
Vapor Density (Air = 1)	no data available
Bulk density	30 lb/ft ³ (bulk density tapped)
Evaporation rate	not applicable
Boiling Point	not applicable
Melting / Freezing Point	not applicable
Water solubility	dispersible
Minimum Ignition Energy	no data available
Decomposition temperature	no data available



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Partition coefficient: n-octanol/water	no data available
Viscosity	not applicable
Flash point	not applicable
Autoignition temperature	no data available
Lower explosion limit	not applicable
Upper explosion limit	not applicable
Explosivity	no data available
Dust explosion class	no data available

SECTION 10: STABILITY AND REACTIVITY

Reactivity

Thermal decomposition no data available

Chemical stability Stable under recommended storage conditions.

Possibility of hazardous reactions No hazardous reactions when stored and handled according to prescribed instructions.

Conditions to avoid no data available

Incompatible materials no data available

Hazardous decomposition products Hydrogen cyanide (hydrocyanic acid)
Carbon monoxide
Nitrogen oxides (NOx)
Hydrogen chloride (HCl)

SECTION 11: TOXICOLOGICAL INFORMATION

Exposure routes Ingestion, Eye contact, Skin contact, Skin Absorption, Inhalation

Immediate Effects
Eye Causes eye irritation.



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Skin Harmful if absorbed through skin.

Ingestion Harmful if swallowed.

Inhalation Harmful if inhaled.

Information on toxicological effects

Acute oral toxicity LD50 (male rat) 2,591 mg/kg

LD50 (female rat) 1,858 mg/kg

Acute inhalation toxicity LC50 (male rat) 2.65 mg/l
Exposure time: 4 h
Determined in the form of liquid aerosol.
(actual)

LC50 (female rat) 2.75 mg/l
Exposure time: 4 h
Determined in the form of liquid aerosol.
(actual)

LC50 (male rat) 10.6 mg/l
Exposure time: 1 h
Determined in the form of liquid aerosol.
Extrapolated from the 4 hr LC50.
(actual)

LC50 (female rat) 11.0 mg/l
Exposure time: 1 h
Determined in the form of liquid aerosol.
Extrapolated from the 4 hr LC50.
(actual)

Acute dermal toxicity LD50 (male/female combined rat) > 2,000 mg/kg

Skin irritation Slight irritation (rabbit)

Eye irritation Minimally irritating. (rabbit)

Sensitisation Non-sensitizing. (guinea pig)

Assessment repeated dose toxicity

Imidacloprid did not cause specific target organ toxicity in experimental animal studies.

Assessment Mutagenicity

Imidacloprid was not mutagenic or genotoxic based on the overall weight of evidence in a battery of in vitro and in vivo tests.

Assessment Carcinogenicity

Imidacloprid was not carcinogenic in lifetime feeding studies in rats and mice.

ACGIH



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None.

NTP

None.

IARC

None.

OSHA

None.

Assessment toxicity to reproduction

Imidacloprid caused reproduction toxicity in a two-generation study in rats only at dose levels also toxic to the parent animals. The reproduction toxicity seen with Imidacloprid is related to parental toxicity.

Assessment developmental toxicity

Imidacloprid caused developmental toxicity only at dose levels toxic to the dams. The developmental effects seen with Imidacloprid are related to maternal toxicity.

Further information

Only acute toxicity studies have been performed on the formulated product.
The non-acute information pertains to the active ingredient(s).

SECTION 12: ECOLOGICAL INFORMATION

Toxicity to fish	LC50 (Rainbow trout (<i>Oncorhynchus mykiss</i>)) 211 mg/l Exposure time: 96 h The value mentioned relates to the active ingredient imidacloprid.
Toxicity to aquatic invertebrates	EC50 (Water flea (<i>Daphnia magna</i>)) 85 mg/l Exposure time: 48 h The value mentioned relates to the active ingredient imidacloprid. LC50 (<i>Chironomus riparius</i> (non-biting midge)) 0.0552 mg/l Exposure time: 24 h The value mentioned relates to the active ingredient imidacloprid.
Toxicity to aquatic plants	EC50 (<i>Desmodium subspicatus</i>) > 10 mg/l Growth rate; Exposure time: 72 h The value mentioned relates to the active ingredient imidacloprid.
Biodegradability	Imidacloprid: not rapidly biodegradable
Koc	Imidacloprid: Koc:225
Bioaccumulation	Imidacloprid: Does not bioaccumulate.



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Mobility in soil	Imidacloprid: Moderately mobile in soils
Environmental precautions	Do not apply directly to water, to areas where surface water is present or to intertidal areas below the mean high water mark. Do not contaminate surface or ground water by cleaning equipment or disposal of wastes, including equipment wash water. Do not allow to get into surface water, drains and ground water. Do not apply this product or allow it to drift to blooming crops or weeds if bees are visiting the treatment area.

SECTION 13: DISPOSAL CONSIDERATIONS

Waste treatment methods

Product	Do not contaminate water, food, or feed by disposal. Improper disposal of excess pesticide, spray mixture, or rinsate is a violation of Federal Law. If these wastes cannot be disposed of by use according to label instructions, contact your State Pesticide or Environmental Control Agency, or the Hazardous Waste representative at the nearest EPA Regional Office for guidance.
Contaminated packaging	Follow advice on product label and/or leaflet. Do not re-use empty containers.
RCRA Information	Characterization and proper disposal of this material as a special or hazardous waste is dependent upon Federal, State and local laws and are the user's responsibility. RCRA classification may apply.

SECTION 14: TRANSPORT INFORMATION

49CFR	Not dangerous goods / not hazardous material
IMDG	
UN number	3077
Class	9
Packaging group	III
Marine pollutant	YES
Proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (IMIDACLOPRID MIXTURE)
IATA	
UN number	3077
Class	9
Packaging group	III



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criteria and hazard information required for safety data sheets, and for workplace labels of non-pesticide chemicals. Following is the hazard information required on the pesticide label:

- Signal word:** Caution!
- Hazard statements:** Harmful if swallowed, inhaled or absorbed through the skin.
Causes eye irritation.
Avoid contact with skin, eyes and clothing.
Avoid breathing dust or vapour.
Wash thoroughly with soap and water after handling.
Remove and wash contaminated clothing before re-use.

SECTION 16: OTHER INFORMATION

NFPA 704 (National Fire Protection Association):

Health - 1 Flammability - 1 Instability - 1 Others - none

HMIS (Hazardous Materials Identification System, based on the Third Edition Ratings Guide)

Health - 1 Flammability - 1 Physical Hazard - 1 PPE -

0 = minimal hazard, 1 = slight hazard, 2 = moderate hazard, 3 = severe hazard, 4 = extreme hazard

Reason for Revision: Revised according to the current OSHA Hazard Communication Standard (29CFR1910.1200)

Revision Date: 12/19/2013

This information is provided in good faith but without express or implied warranty. The customer assumes all responsibility for safety and use not in accordance with label instructions. The product names are registered trademarks of Bayer.





**BAYER ADVANCED NATRIA® INSECTICIDAL SOAP
READY-TO-USE**

Version 2.0 / USA
102000023451

1/8
Revision Date: 04/28/2014
Print Date: 04/28/2014

**SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE
COMPANY/UNDERTAKING**

Product identifier

Trade name BAYER ADVANCED NATRIA® INSECTICIDAL SOAP READY-TO-USE
Product code (UVP) 79887965
SDS Number 102000023451
EPA Registration No. 67702-21-72155

Relevant identified uses of the substance or mixture and uses advised against

Use Insecticide
Restrictions on use See product label for restrictions.

Information on manufacturer

Bayer Environmental Science
2 T.W. Alexander Drive
Research Triangle PK, NC 27709
United States

**Emergency Telephone
Number (24hr/ 7 days)** 1-800-334-7577 (24 hours/day)

**Product Information
Telephone Number** 1-800-331-2867

SDS Information or Request SDSINFO.BCS-NA@bayer.com

SECTION 2: HAZARDS IDENTIFICATION

Classification in accordance with regulation HCS 29CFR §1910.1200

This material is not hazardous under the criteria of the Federal OSHA Hazard Communication Standard 29CFR 1910.1200.

Other hazards

No particular hazards known.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Hazardous Component Name	CAS-No.	Average % by Weight
Potassium salt of fatty acids		1.00



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SECTION 4: FIRST AID MEASURES

Description of first aid measures

- General advice** When possible, have the product container or label with you when calling a poison control center or doctor or going for treatment.
- Inhalation** Move to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth if possible. Call a physician or poison control center immediately.
- Skin contact** Take off contaminated clothing and shoes immediately. Wash off immediately with plenty of water for at least 15 minutes. Call a physician or poison control center immediately.
- Eye contact** Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Call a physician or poison control center immediately.
- Ingestion** Call a physician or poison control center immediately. Rinse out mouth and give water in small sips to drink. DO NOT induce vomiting unless directed to do so by a physician or poison control center. Never give anything by mouth to an unconscious person. Do not leave victim unattended.

Most important symptoms and effects, both acute and delayed

Symptoms To date no symptoms are known.

Indication of any immediate medical attention and special treatment needed

Treatment Appropriate supportive and symptomatic treatment as indicated by the patient's condition is recommended. There is no specific antidote.

SECTION 5: FIREFIGHTING MEASURES

Extinguishing media

Suitable Water, Foam, Carbon dioxide (CO2)

Unsuitable None known.

Special hazards arising from the substance or mixture Dangerous gases are evolved in the event of a fire.

Advice for firefighters

Special protective equipment for fire-fighters Firefighters should wear NIOSH approved self-contained breathing apparatus and full protective clothing.

Further information Keep out of smoke. Fight fire from upwind position. Cool closed containers exposed to fire with water spray. Do not allow run-off from fire fighting to enter drains or water courses.



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Flash point	no data available
Autoignition temperature	no data available
Lower explosion limit	no data available
Upper explosion limit	no data available
Explosivity	not applicable

SECTION 6: ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Precautions Keep unauthorized people away. Isolate hazard area. Avoid contact with spilled product or contaminated surfaces.

Methods and materials for containment and cleaning up

Methods for cleaning up Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust). Collect and transfer the product into a properly labelled and tightly closed container. Clean contaminated floors and objects thoroughly, observing environmental regulations.

Additional advice Material can create slippery conditions. Use personal protective equipment. Do not allow to enter soil, waterways or waste water canal.

Reference to other sections Information regarding safe handling, see section 7.
Information regarding personal protective equipment, see section 8.
Information regarding waste disposal, see section 13.

SECTION 7: HANDLING AND STORAGE

Precautions for safe handling

Advice on safe handling Ensure adequate ventilation. Handle and open container in a manner as to prevent spillage.

Conditions for safe storage, including any incompatibilities

Requirements for storage areas and containers Store in a cool, dry place and in such a manner as to prevent cross contamination with other crop protection products, fertilizers, food, and feed. Store in original container and out of the reach of children, preferably in a locked storage area.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters



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No control parameters known.

Exposure controls

Personal protective equipment

In normal use and handling conditions please refer to the label and/or leaflet. In all other cases the following recommendations would apply.

Respiratory protection	When respirators are required, select NIOSH approved equipment based on actual or potential airborne concentrations and in accordance with the appropriate regulatory standards and/or industry recommendations.
Hand protection	Chemical resistant nitrile rubber gloves
Eye protection	Safety glasses with side-shields
Skin and body protection	Wear long-sleeved shirt and long pants and shoes plus socks.
General protective measures	There are no known hazards associated with this product when used according to the label directions. The following guidelines should be followed. Avoid inhalation of vapour or mist. Avoid contact with skin and eyes. Wash hands thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco, using the toilet or applying cosmetics. Do not allow children or pets to enter the treated area until it has dried.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	beige to brown
Physical State	liquid, clear
Odor	soapy
Odour Threshold	no data available
pH	9.5 - 9.7
Vapor Pressure	no data available
Vapor Density (Air = 1)	no data available
Density	1.00 g/cm ³ at 20 °C
Evaporation rate	no data available
Boiling Point	ca. 100 °C / 212 °F
Melting / Freezing Point	no data available
Water solubility	soluble
Minimum Ignition Energy	not applicable



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Decomposition temperature	not applicable
Partition coefficient: n-octanol/water	no data available
Viscosity	1 - 5 mPa.s
Flash point	no data available
Autoignition temperature	no data available
Lower explosion limit	no data available
Upper explosion limit	no data available
Explosivity	not applicable

SECTION 10: STABILITY AND REACTIVITY

Reactivity

Thermal decomposition	not applicable
Chemical stability	Stable under normal conditions.
Possibility of hazardous reactions	No hazardous reactions when stored and handled according to prescribed instructions.
Conditions to avoid	no data available
Incompatible materials	Strong oxidizing agents
Hazardous decomposition products	No decomposition products expected under normal conditions of use.

SECTION 11: TOXICOLOGICAL INFORMATION

Exposure routes	Eye contact, Skin contact, Inhalation
Immediate Effects	
Eye	May cause slight irritation.
Skin	May cause slight irritation.

Information on toxicological effects

Acute oral toxicity	LD50 > 5,000 mg/kg
Acute dermal toxicity	LD50 > 5,000 mg/kg

ACGIH

None.



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NTP

None.

IARC

None.

OSHA

None.

SECTION 12: ECOLOGICAL INFORMATION

Environmental precautions Do not allow to get into surface water, drains and ground water.
Do not contaminate surface or ground water by cleaning equipment or disposal of wastes, including equipment wash water.
Do not apply when weather conditions favor runoff or drift.
Drift and runoff from treated areas may be hazardous to aquatic organisms in adjacent sites.
Apply this product as specified on the label.

SECTION 13: DISPOSAL CONSIDERATIONS

Waste treatment methods

Product It is best to use all of the product in accordance with label directions. If it is necessary to dispose of unused product, please follow container label instructions and applicable local guidelines.
Never place unused product down any indoor or outdoor drain.

Contaminated packaging Follow advice on product label and/or leaflet.
Do not re-use empty containers.
Place empty container in trash.

RCRA Information Characterization and proper disposal of this material as a special or hazardous waste is dependent upon Federal, State and local laws and are the user's responsibility. RCRA classification may apply.

SECTION 14: TRANSPORT INFORMATION

According to national and international transport regulations this material is not classified as dangerous goods / hazardous material.

SECTION 15: REGULATORY INFORMATION



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EPA Registration No. 67702-21-72155

US Federal Regulations

TSCA list

None.

US. Toxic Substances Control Act (TSCA) Section 12(b) Export Notification (40 CFR 707, Subpt D)

None.

SARA Title III - Section 302 - Notification and Information

None.

SARA Title III - Section 313 - Toxic Chemical Release Reporting

None.

US States Regulatory Reporting

CA Prop65

This product does not contain any substances known to the State of California to cause cancer.

This product does not contain any substances known to the State of California to cause reproductive harm.

US State Right-To-Know Ingredients

None.

Canadian Regulations

Canadian Domestic Substance List

None.

Environmental

CERCLA

None.

Clean Water Section 307 Priority Pollutants

None.

Safe Drinking Water Act Maximum Contaminant Levels

None.

EPA/FIFRA Information:

This chemical is a pesticide product registered by the Environmental Protection Agency and is subject to certain labeling requirements under federal pesticide law. These requirements differ from the classification criteria and hazard information required for safety data sheets, and for workplace labels of non-pesticide chemicals. Following is the hazard information required on the pesticide label:

Signal word: Caution!

Hazard statements: Avoid contact with skin, eyes and clothing.
Avoid breathing spray mist.

SECTION 16: OTHER INFORMATION



**BAYER ADVANCED NATRIA® INSECTICIDAL SOAP
READY-TO-USE**

Version 2.0 / USA
102000023451

8/8
Revision Date: 04/28/2014
Print Date: 04/28/2014

NFPA 704 (National Fire Protection Association):

Health - 1 Flammability - 0 Instability - 0 Others - none

HMIS (Hazardous Materials Identification System, based on the Third Edition Ratings Guide)

Health - 1 Flammability - 0 Physical Hazard - 0 PPE -

0 = minimal hazard, 1 = slight hazard, 2 = moderate hazard, 3 = severe hazard, 4 = extreme hazard

Reason for Revision: Revised according to the current OSHA Hazard Communication Standard (29CFR1910.1200)

Revision Date: 04/28/2014

This information is provided in good faith but without express or implied warranty. The customer assumes all responsibility for safety and use not in accordance with label instructions. The product names are registered trademarks of Bayer.

1. Identification

Product identifier	ORTHENE® 97, AMVAC
Other means of identification	
SDS number	372
QAD Number	12606
Synonym(s)	Orthene® PCO Pellets * Orthene® 97 ST * Orthene® Turf, Tree & Ornamental 97 Spray
Recommended use	Organophosphate insecticide.
Recommended restrictions	None known.
Product registration number	
EPA	5481-8978 5481-8973

Manufacturer/Importer/Supplier/Distributor information

Manufacturer

Company name	AMVAC Chemical Corporation	
Address	4100 E Washington Blvd Los Angeles, CA 90023 USA	
Telephone	AMVAC Chemical Corp	323-264-3910
	AMVAC Chemical Corp	323-268-1028 (FAX)
Website	www.Amvac-Chemical.com	
E-mail	CustServ@Amvac-Chemical.com	
Emergency phone number	Medical	888-681-4261
	CHEMTREC® (USA+Canada)	800-424-9300
	Product Use	888-462-6822
	CHEMTREC® (Outside USA)	+1-703-527-3887

2. Hazard(s) identification

Physical hazards	Not classified.	
Health hazards	Acute toxicity, oral	Category 4
Environmental hazards	Hazardous to the aquatic environment, acute hazard	Category 2
	Hazardous to the aquatic environment, long-term hazard	Category 2
OSHA defined hazards	Not classified.	

Label elements



Signal word	Warning
Hazard statement	Harmful if swallowed. Toxic to aquatic life. Toxic to aquatic life with long lasting effects.
Precautionary statement	
Prevention	Wash thoroughly after handling. Do not eat, drink or smoke when using this product. Avoid release to the environment.
Response	If swallowed: Call a poison center/doctor if you feel unwell. Rinse mouth. Collect spillage.
Storage	Store away from incompatible materials.
Disposal	Dispose of contents/container in accordance with local/regional/national/international regulations.
Hazard(s) not otherwise classified (HNOC)	None known.

Supplemental information

This chemical is a pesticide product registered by the United States Environmental Protection Agency and is subject to certain labeling requirements under federal pesticide law. These requirements differ from the classification criteria and hazard information required for safety data sheets (SDS), and for workplace labels of non-pesticide chemicals. The hazard information required on the pesticide label is reproduced below. The pesticide label also includes other important information, including directions for use.

HAZARDS TO HUMANS AND DOMESTIC ANIMALS.

CAUTION

Harmful if swallowed.

ENVIRONMENTAL HAZARDS

This pesticide is toxic to birds. For terrestrial uses, do not apply directly to water, or to areas where surface water is present or to intertidal areas below the mean high water mark. Do not contaminate water when disposing of equipment washwater or rinsate. This product and its degradate are highly toxic to bees exposed to direct treatment on blooming crops or weeds. Do not apply this product or allow it to drift to blooming crops or weeds while bees are foraging the treatment area.

3. Composition/information on ingredients

Mixtures

Chemical name	Common name and synonyms	CAS number	%
Acephate (O,S-Dimethylacetylphosphoramido thioate)		30560-19-1	97.4
Other compounds			2.6

4. First-aid measures

Inhalation

Move to fresh air. Call a physician if symptoms develop or persist. Do not use mouth-to-mouth method if victim inhaled the substance. Induce artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device.

Skin contact

Wash off with soap and water. Get medical attention if irritation develops and persists. Take off contaminated clothing and wash before reuse.

Eye contact

Flush eyes immediately with large amounts of water. Remove contact lenses, if present and easy to do. Get medical attention if irritation develops and persists.

Ingestion

If victim is conscious, administer an 8 oz. glass of water containing 2 tbsp. activated charcoal. Have person lie on their left side to slow down absorption of the ingested material. Never give anything by mouth to a victim who is unconscious or is having convulsions. Get medical advice/attention if you feel unwell. Rinse mouth. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs. Do not use mouth-to-mouth method if victim ingested the substance. Induce artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device.

Most important symptoms/effects, acute and delayed

This product is a Cholinesterase Inhibitor. Preexisting skin or respiratory disorders may be aggravated by exposure to components of this product. Preexisting conditions which lower cholinesterase levels increase vulnerability to cholinesterase depression. these include: (for plasma) chronic alcoholism; malnutrition; dermatomyositis; existing toxicity from exposure to carbon disulfide; benzalkonium salts, organic mercury compounds, ciguatoxins or solanines; and (for RBC) hemolytic anemia. Acute cholinesterase depression may be evidenced by headache, nausea, vomiting, diarrhea, abdominal cramps, excessive sweating, salivation and tearing, constricted pupils, blurred vision, tightness in chest, weakness, muscle twitching and confusion; in extreme cases, unconsciousness, convulsions, severe respiratory depression and death may occur. Product may cause slight but temporary irritation to the eyes and may cause irritation of the skin. Direct contact with eyes may cause temporary irritation.

Indication of immediate medical attention and special treatment needed

This product is an Organophosphate (OP) Insecticide. Do not handle the patient without the following protective equipment in place: chemical resistant gloves and apron (preferably nitrile). Remove contaminated clothing and do not reuse without thorough cleaning with detergent and hot water. Dispose of heavily contaminated clothing, including shoes, as a hazardous waste. Do not wait for laboratory confirmation to treat patients with strong clinical evidence of poisoning. In the USA and other countries, contact your local or national poison control center for more information. Establish airway and oxygenation. IV Atropine sulfate is the antidote of choice against parasympathetic nervous stimulation. If there are signs of parasympathetic stimulation, Atropine Sulfate should be injected at 10 minutes intervals in doses of 1 to 2 milligrams until complete atropinization has occurred. Pralidoxime chloride (2-PAM chloride) may also be used as an effective antidote in addition to and while maintaining full atropinization. In adults, an initial dose of 1 gram of 2-PAM should be injected, preferably as an infusion, in 250 cc of saline over a 15 to 20 minute period. If this is not practical, 2-PAM may be administered slowly by intravenous injection as a 5% solution in water over not less than 2 minutes. After about an hour, a second dose of 1 gram of 2-PAM will be indicated if muscle weakness has not been relieved. For infants and children, the dose of 2-PAM is 0.25 grams. Avoid morphine, aminophylline, phenothiazine, reserpine, furosemide and ethacrynic acid. Clear chest by postural drainage. Oxygen administration may be necessary. Observe patient continuously for 48 hours. Repeated exposure to cholinesterase inhibitors may without warning cause prolonged susceptibility very small doses of any cholinesterase inhibitor. Allow no further exposure until time for cholinesterase regeneration has been attained as determined by a blood test. Bathe and shampoo contaminated skin and hair. If ingested, empty stomach; activated charcoal is useful to further to further limit absorption. If victim is alert, Syrup of Ipecac (2 tablespoons in adults, 1 tablespoon in small children) is indicated. If symptoms such as loss of gag reflex, convulsions, or unconsciousness occur before emesis, gastric lavage should be considered following intubation with a cuffed indotracheal tube. Keep victim under observation. Keep victim warm. Symptoms may be delayed.

General information

Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Show this safety data sheet to the doctor in attendance. This product is a Cholinesterase Inhibitor. A physician should be contacted in all cases of exposure to the technical and its formulations.

5. Fire-fighting measures

Suitable extinguishing media

Water fog. Foam. Dry chemical powder. Carbon dioxide (CO2).

Unsuitable extinguishing media

Do not use water jet as an extinguisher, as this will spread the fire.

Specific hazards arising from the chemical

During fire, gases hazardous to health may be formed.

Special protective equipment and precautions for firefighters

Firefighters should wear full protective clothing including self contained breathing apparatus.

Fire fighting equipment/instructions

Use water spray to cool unopened containers.

Specific methods

Use standard firefighting procedures and consider the hazards of other involved materials.

General fire hazards

No unusual fire or explosion hazards noted.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Wear appropriate protective equipment and clothing during clean-up. Ensure adequate ventilation. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS.

Methods and materials for containment and cleaning up

Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Prevent entry into waterways, sewer, basements or confined areas. Shovel up, sweep up or vacuum up the material and place in a container for salvage or disposal. Clean surface thoroughly to remove residual contamination. Decontaminate the area and equipment with dilute alkali or ammonia (less than 5%) and detergent.

Environmental precautions

Never return spills to original containers for re-use. For waste disposal, see section 13 of the SDS. Avoid release to the environment. Prevent further leakage or spillage if safe to do so. Avoid discharge into drains, water courses or onto the ground. Inform appropriate managerial or supervisory personnel of all environmental releases.

7. Handling and storage

Precautions for safe handling

Wear appropriate personal protective equipment. Do not taste or swallow. When using, do not eat, drink or smoke. Provide adequate ventilation. Wash hands thoroughly after handling. Avoid release to the environment. Observe good industrial hygiene practices.

Conditions for safe storage, including any incompatibilities Store in original tightly closed container. Store away from incompatible materials (see Section 10 of the SDS). Keep away from food, drink and animal feedings.

8. Exposure controls/personal protection

Occupational exposure limits No exposure limits noted for ingredient(s).

Biological limit values No biological exposure limits noted for the ingredient(s).

Appropriate engineering controls Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level.

Individual protection measures, such as personal protective equipment

Eye/face protection If contact is likely, safety glasses with side shields are recommended.

Skin protection

Hand protection Wear appropriate chemical resistant gloves. Nitrile gloves are recommended.

Other Wear suitable protective clothing. Long-sleeved shirt and long pants or coveralls, socks and closed toe shoes are required.

Respiratory protection If engineering controls do not maintain airborne concentrations below recommended exposure limits (where applicable) or to an acceptable level (in countries where exposure limits have not been established), an approved respirator must be worn.

Thermal hazards Wear appropriate thermal protective clothing, when necessary.

General hygiene considerations Keep away from food and drink. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

9. Physical and chemical properties

Appearance White pellet

Physical state Solid.

Form Pellets.

Color White.

Odor Strong cabbage-like odor

Odor threshold Not available.

pH Not available.

Melting point/freezing point 179.6 °F (82 °C) estimated

Initial boiling point and boiling range Not available.

Flash point Not available.

Evaporation rate Not available.

Flammability (solid, gas) Not available.

Upper/lower flammability or explosive limits

Flammability limit - lower (%) Not available.

Flammability limit - upper (%) Not available.

Explosive limit - lower (%) Not available.

Explosive limit - upper (%) Not available.

Vapor pressure 1.70E-06 mm Hg estimated

Vapor density Not available.

Relative density Not available.

Solubility(ies)

Solubility (water) Not available.

Auto-ignition temperature Not available.

Decomposition temperature Not available.

Viscosity Not available.

Other informationBulk density 27 lb/ft³**10. Stability and reactivity**

Reactivity The product is stable and non-reactive under normal conditions of use, storage and transport.

Chemical stability Material is stable under normal conditions.

Possibility of hazardous reactions Hazardous polymerization does not occur.

Conditions to avoid Strong oxidizing agents and alkaline compounds.

Incompatible materials Strong oxidizing agents.

Hazardous decomposition products Emits hazardous fumes and smoke of unknown composition when heated to decomposition or burned.

11. Toxicological information**Information on likely routes of exposure**

Inhalation No adverse effects due to inhalation are expected.

Skin contact No adverse effects due to skin contact are expected.

Eye contact Direct contact with eyes may cause temporary irritation.

Ingestion Harmful if swallowed.

Symptoms related to the physical, chemical and toxicological characteristics Direct contact with eyes may cause temporary irritation.

Information on toxicological effects

Acute toxicity Harmful if swallowed.

Product	Species	Test Results
ORTHENE® 97, AMVAC		
Acute		
Dermal		
LD50	Rabbit	> 2000 mg/kg (tox Cat III)
Inhalation		
LC50	Rat	> 61.7 mg/l/4h (similar product, Tox Cat IV)
Oral		
LD50	Rat	688 mg/kg (Tox Cat III)

* Estimates for product may be based on additional component data not shown.

Skin corrosion/irritation Prolonged skin contact may cause temporary irritation.

Irritation Corrosion - Skin

ORTHENE® 97, AMVAC, Slight Irritant (Tox Cat IV)

Serious eye damage/eye irritation Direct contact with eyes may cause temporary irritation.

Eye

ORTHENE® 97, AMVAC, Slight Irritant (Tox Cat IV)

Respiratory or skin sensitization

Respiratory sensitization Not a respiratory sensitizer.

Skin sensitization This product is not expected to cause skin sensitization.

Skin sensitization

Acephate, Not a sensitizer
(O,S-Dimethylacetylphosphoramidothioate) Species: Guinea pig

Germ cell mutagenicity No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.

Carcinogenicity**OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)**

Not listed.

Reproductive toxicity This product is not expected to cause reproductive or developmental effects.

Specific target organ toxicity - single exposure Not classified.

Specific target organ toxicity - repeated exposure Not classified.

Aspiration hazard Not an aspiration hazard.

12. Ecological information

Ecotoxicity Toxic to aquatic life with long lasting effects.

Components	Species	Test Results
Acephate (O,S-Dimethylacetylphosphoramidothioate) (CAS 30560-19-1)		
Aquatic		
Crustacea	EC50	Water flea (Daphnia magna) > 50 mg/l, 48 hours
Fish	LC50	Rainbow trout,donaldson trout (Oncorhynchus mykiss) 2.36 - 3 mg/l, 96 hours

* Estimates for product may be based on additional component data not shown.

Persistence and degradability No data is available on the degradability of this product.

Bioaccumulative potential

Partition coefficient n-octanol / water (log Kow)
 Acephate (O,S-Dimethylacetylphosphoramidothioate) -0.85

Mobility in soil No data available.

Other adverse effects No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

13. Disposal considerations

Disposal instructions Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Do not allow this material to drain into sewers/water supplies. Do not contaminate ponds, waterways or ditches with chemical or used container. Dispose of contents/container in accordance with local/regional/national/international regulations.

Local disposal regulations Dispose in accordance with all applicable regulations.

Hazardous waste code The waste code should be assigned in discussion between the user, the producer and the waste disposal company.

Waste from residues / unused products Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).

Contaminated packaging Since emptied containers may retain product residue, follow label warnings even after container is emptied. Empty containers should be taken to an approved waste handling site for recycling or disposal.

14. Transport information

DOT

UN number UN3077

UN proper shipping name Environmentally hazardous substances, solid, n.o.s. (Acephate (O,S-Dimethylacetylphosphoramidothioate))

Transport hazard class(es)

Class 9

Subsidiary risk -

Label(s) 9

Packing group III

Special precautions for user Read safety instructions, SDS and emergency procedures before handling.

Special provisions 8, 146, 335, A112, B54, IB8, IP3, N20, T1, TP33

Packaging exceptions 155

Packaging non bulk 213

Packaging bulk 240

IATA

UN number UN3077

UN proper shipping name Environmentally hazardous substance, solid, n.o.s. (Acephate (O,S-Dimethylacetylphosphoramidothioate))

Transport hazard class(es)

Class 9
Subsidiary risk -
Packing group III
Environmental hazards Yes
ERG Code 9L
Special precautions for user Read safety instructions, SDS and emergency procedures before handling.

Other information

Passenger and cargo aircraft Allowed.
Cargo aircraft only Allowed.

IMDG

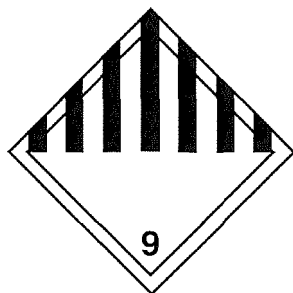
UN number UN3077
UN proper shipping name ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Acephate (O,S-Dimethylacetylphosphoramidothioate))

Transport hazard class(es)

Class 9
Subsidiary risk -
Packing group III
Environmental hazards
Marine pollutant Yes
EmS F-A, S-F
Special precautions for user Read safety instructions, SDS and emergency procedures before handling.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code Not applicable.

DOT; IATA; IMDG



Marine pollutant



General information IMDG Regulated Marine Pollutant.

15. Regulatory information

US federal regulations This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200. This product is registered under EPA/FIFRA Regulations. It is a violation of Federal Law to use this product in any manner inconsistent with its labeling. Read and follow all label directions. This product is excluded from listing requirements under EPA/TSCA.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not regulated.

CERCLA Hazardous Substance List (40 CFR 302.4)

Not listed.

SARA 304 Emergency release notification

Not regulated.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not listed.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories
 Immediate Hazard - Yes
 Delayed Hazard - No
 Fire Hazard - No
 Pressure Hazard - No
 Reactivity Hazard - No

SARA 302 Extremely hazardous substance

Not listed.

SARA 311/312 Hazardous chemical No

SARA 313 (TRI reporting)

Chemical name	CAS number	% by wt.
Acephate (O,S-Dimethylacetylphosphoramidothioate)	30560-19-1	97.4

Other federal regulations**Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List**

Not regulated.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

Not regulated.

Safe Drinking Water Act (SDWA) Not regulated.

US state regulations**US. California Controlled Substances. CA Department of Justice (California Health and Safety Code Section 11100)**

Not listed.

US. Massachusetts RTK - Substance List

Not regulated.

US. New Jersey Worker and Community Right-to-Know Act

Acephate (O,S-Dimethylacetylphosphoramidothioate) (CAS 30560-19-1)

US. Pennsylvania Worker and Community Right-to-Know Law

Not listed.

US. Rhode Island RTK

Acephate (O,S-Dimethylacetylphosphoramidothioate) (CAS 30560-19-1)

US. California Proposition 65

California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65): This material is not known to contain any chemicals currently listed as carcinogens or reproductive toxins.

International Inventories

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	Yes
Canada	Domestic Substances List (DSL)	No
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	No
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	No
Korea	Existing Chemicals List (ECL)	Yes
New Zealand	New Zealand Inventory	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	No

*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)

A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

16. Other information, including date of preparation or last revision

Issue date	03-27-2015
References	ACGIH: American Conference of Governmental Industrial Hygienists CERCLA: Comprehensive Environmental Response, Compensation, and Liability Act EPA: Environmental Protection Agency FIFRA: Federal Insecticide, Fungicide, and Rodenticide Act IARC: International Agency for Research on Cancer NTP: National Toxicology Program OSHA: Occupational Safety and Health Agency SARA: Superfund Amendments and Reauthorization Act TSCA: Toxic Substances Control Act DOT: Department of Transportation IMDG: International Maritime Dangerous Goods IATA: International Air Transport Association
Version #	01
Further information	Not available.
HMIS® ratings	Health: 2 Flammability: 0 Physical hazard: 0
NFPA ratings	Health: 2 Flammability: 0 Instability: 0
Disclaimer	<p>AMVAC Chemical Corporation cannot anticipate all conditions under which this information and its product, or the products of other manufacturers in combination with its product, may be used. It is the user's responsibility to ensure safe conditions for handling, storage and disposal of the product, and to assume liability for loss, injury, damage or expense due to improper use. This information is provided for the limited guidance to the user. While AMVAC believes that the information is, as of the date hereof, reliable, it is the user's responsibility to determine the suitability of the information for its purposes. The user is advised not to construe the information as absolutely complete since additional information may be necessary or desirable when particular, exceptional, or variable conditions or circumstances exist (like combinations with other materials), or because of applicable regulations. No express or implied warranty of merchantability or fitness for a particular purpose or otherwise is made hereunder with respect to the information or the product to which the information relates.</p> <p>©2015 AMVAC Chemical Corporation. All Rights Reserved. AMVAC, Orthene, Orthene PCO Pellets, Orthene 97, Orthene 97 ST, Orthene Turf, Tree & ornamental 97 Spray, and the Beaker Logo are trademarks owned by AMVAC Chemical Corporation. Chemtrec is a trademark of the American Chemistry Council, Inc. HMIS is a registered trade and service mark of the American Coatings Association. NFPA is a trademark of the National Fire Protection Association, Inc.</p>
Revision Information	Product and Company Identification: Synonyms Composition / Information on Ingredients: Undisclosed Ingredient Statement Physical & Chemical Properties: Multiple Properties Toxicological Information: Toxicological Property Data



SAFETY DATA SHEET

GARDENTECH® SEVIN® CONCENTRATE BUG KILLER

January 2015

SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

Product identifier

Trade name GARDENTECH® SEVIN® CONCENTRATE BUG KILLER

EPA Reg. No. 264-334-71004

Relevant identified uses of the substance or mixture and uses advised against

Use Insecticide

Restrictions on use See product label for restrictions.

Information on manufacturer

TechPac, LLC.
1000 Parkwood Circle
Suite 700
Atlanta, GA 30339

Emergency telephone no.

Emergency Telephone Number (24hr/ 7 days) 1-800-420-9347

Product Information Telephone Number 1-866-945-5033

SDS Information or Request 1-866-945-5033

SECTION 2: HAZARDS IDENTIFICATION

Classification in accordance with regulation HCS 29CFR §1910.1200

Carcinogenicity : Category 2

Acute toxicity (Inhalation): Category 3

Acute toxicity (Oral): Category 4



Signal word: Danger

Hazard statements

Toxic if inhaled.

Suspected of causing cancer.

Harmful if swallowed.

GARDENTECH® SEVIN® CONCENTRATE BUG KILLER

January 2015

Precautionary statements

Avoid breathing mist and spray.

Use only outdoors or in a well-ventilated area.

Obtain special instructions before use.

Do not handle until all safety precautions have been read and understood.

Wear protective gloves/protective clothing/eye protection/face protection.

Wash thoroughly after handling.

Do not eat, drink or smoke when using this product.

IF INHALED: Remove person to fresh air and keep comfortable for breathing.

Call a POISON CENTER/doctor/physician.

Specific treatment (see supplemental first aid instructions on this label).

IF exposed or concerned: Get medical advice/ attention.

IF SWALLOWED: Call a POISON CENTER/doctor/physician if you feel unwell.

Rinse mouth.

Store in a well-ventilated place. Keep container tightly closed.

Store locked up.

Dispose of contents/container in accordance with local regulation.

Other hazards

This product contains an cholinesterase inhibitor.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Hazardous Component Name	CAS-No.	Concentration % by weight
Carbaryl	63-25-2	22.50
1,2-Propanediol	57-55-6	3.50
Naphthalene and alkyl naphthalene sulphonic acids formaldehyde condensate, sodium salt	68425-94-5	1.50

SECTION 4: FIRST AID MEASURES

Description of first aid measures

General advice

When possible, have the product container or label with you when calling a poison control center or doctor or going for treatment.

Inhalation

Move to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth if possible. Call a physician or poison control center immediately.

Skin contact

Take off contaminated clothing and shoes immediately. Wash off immediately with plenty of water for at least 15 minutes. Call a physician or poison control center immediately.

Eye contact

Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Call a physician or poison control center immediately.

GARDENTECH® SEVIN® CONCENTRATE BUG KILLER

(

January 2015

Ingestion	Call a physician or poison control center immediately. Rinse out mouth and give water in small sips to drink. DO NOT induce vomiting unless directed to do so by a physician or poison control center. Never give anything by mouth to an unconscious person. Do not leave victim unattended.
Most important symptoms and effects, both acute and delayed	
Symptoms	Temporary blurred vision due to contraction of the pupils (miosis) following contact with the eyes., Bradycardia, Low blood pressure, Salivation, Bronchial hypersecretion, Vomiting, Diarrhoea, Sweating, Muscular fasciculation, Spasm, Breathing difficulties, Respiratory paralysis, Somnolence, Coma, Respiratory failure, Hypothermia, Convulsions, Nausea
Indication of any immediate medical attention and special treatment needed	
Risks	This product is a cholinesterase inhibitor carbamate.
Treatment	The product inhibits cholinesterase resulting in stimulation of the central nervous system, the parasympathetic nervous system, and the somatic motor nerves. The following antidote is generally accepted: atropine. Do not use oximes such as 2-PAM unless organophosphate intoxication is suspected. Watch for pulmonary edema, which may develop in serious cases of poisoning even after 24-48 hours. At first sign of pulmonary edema, the patient should be placed in an oxygen tent and treated symptomatically. Contraindications: derivatives of morphine.

SECTION 5: FIREFIGHTING MEASURES

Extinguishing media	
Suitable	Water spray, Foam, Carbon dioxide (CO ₂), Dry powder
Unsuitable	None known.
Special hazards arising from the substance or mixture	In the event of fire the following may be released:, Nitrogen oxides (NO _x), Carbon monoxide (CO)
Advice for firefighters	
Special protective equipment for fire-fighters	Firefighters should wear NIOSH approved self-contained breathing apparatus and full protective clothing.
Further information	Evacuate personnel to safe areas. Keep out of smoke. Fight fire from upwind position. Cool closed containers exposed to fire with water spray. Do not allow run-off from fire fighting to enter drains or water courses.
Flash point	> 93.4 °C

GARDENTECH® SEVIN® CONCENTRATE BUG KILLER

January 2015

Autoignition temperature	no data available
Lower explosion limit	no data available
Upper explosion limit	no data available
Explosivity	not applicable

SECTION 6: ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Precautions Keep unauthorized people away. Isolate hazard area. Avoid contact with spilled product or contaminated surfaces.

Methods and materials for containment and cleaning up

Methods for cleaning up Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust). Collect and transfer the product into a properly labelled and tightly closed container. Clean contaminated floors and objects thoroughly, observing environmental regulations.

Additional advice Use personal protective equipment. Do not allow to enter soil, waterways or waste water canal. Inform appropriate authorities immediately if contamination occurs.

Reference to other sections Information regarding safe handling, see section 7.
Information regarding personal protective equipment, see section 8.
Information regarding waste disposal, see section 13.

SECTION 7: HANDLING AND STORAGE

Precautions for safe handling

Advice on safe handling Maintain exposure levels below the exposure limit through the use of general and local exhaust ventilation.

Hygiene measures Wash hands thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco, using the toilet or applying cosmetics.
Remove Personal Protective Equipment (PPE) immediately after handling this product. Before removing gloves clean them with soap and water. Remove soiled clothing immediately and clean thoroughly before using again. Wash thoroughly and put on clean clothing.

Conditions for safe storage, including any incompatibilities

Requirements for storage areas and containers Store in a cool, dry place and in such a manner as to prevent cross contamination with other crop protection products, fertilizers, food, and feed. Store in original container and out of the reach of children, preferably in a locked storage area.

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Advice on common storage Keep away from food, drink and animal feedingstuffs.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Components	CAS-No.	Control parameters	Update	Basis
Carbaryl (Inhalable fraction and vapor.)	63-25-2	0.5 mg/m ³ (TWA)	02 2012	ACGIH
Carbaryl	63-25-2	5 mg/m ³ (REL)	2010	NIOSH
Carbaryl	63-25-2	5 mg/m ³ (PEL)	02 2006	OSHA Z1
Carbaryl	63-25-2	5 mg/m ³ (TWA)	1989	OSHA Z1A
Carbaryl	63-25-2	5 mg/m ³ (TWA)	06 2008	TN OEL
Carbaryl	63-25-2	5ug/m ³ (ST ESL)	07 2011	TX ESL
Carbaryl	63-25-2	0.5ug/m ³ (AN ESL)	07 2011	TX ESL
Carbaryl	63-25-2	5 mg/m ³ (TWA PEL)	08 2010	US CA OEL
Carbaryl	63-25-2	0.5 mg/m ³ (TWA)		OES BCS*
1,2-Propanediol (Vapor.)	57-55-6	1000ug/m ³ (ST ESL)	02 2013	TX ESL
1,2-Propanediol (Vapor.)	57-55-6	50ppb (AN ESL)	02 2013	TX ESL
1,2-Propanediol (Vapor.)	57-55-6	500ppb (ST ESL)	02 2013	TX ESL
1,2-Propanediol (Vapor.)	57-55-6	100ug/m ³ (AN ESL)	02 2013	TX ESL
1,2-Propanediol (Aerosol.)	57-55-6	10 mg/m ³ (TWA)	2010	WEEL
Synthetic amorphous silica	112926-00-8	6 mg/m ³ (REL)	2010	NIOSH
Synthetic amorphous silica	112926-00-8	6 mg/m ³ (TWA)	1989	OSHA Z1A
Synthetic amorphous silica	112926-00-8	6 mg/m ³ (TWA)	06 2008	TN OEL
Synthetic amorphous silica (Particulate.)	112926-00-8	2ug/m ³ (AN ESL)	02 2013	TX ESL
Synthetic amorphous silica (Particulate.)	112926-00-8	27ug/m ³ (ST ESL)	02 2013	TX ESL

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Synthetic amorphous silica	112926-00-8	20millions of particles per cubic foot of air (TWA)	2000	Z3
Synthetic amorphous silica	112926-00-8	0.8 mg/m3 (TWA)	2000	Z3

*OES BCS: Internal Bayer CropScience "Occupational Exposure Standard"

Exposure controls

Personal protective equipment

In normal use and handling conditions please refer to the label and/or leaflet. In all other cases the following recommendations would apply.

Respiratory protection

When respirators are required, select NIOSH approved equipment based on actual or potential airborne concentrations and in accordance with the appropriate regulatory standards and/or industry recommendations.

Under conditions immediately dangerous to life or health, or emergency conditions with unknown concentrations, use a full-face positive pressure air-supplied respirator equipped with an emergency escape air supply unit or use a self-contained breathing apparatus unit.

Hand protection

Chemical resistant nitrile rubber gloves

Eye protection

Tightly fitting safety goggles

Skin and body protection

Wear long-sleeved shirt and long pants and shoes plus socks.

General protective measures

Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables, use detergent and warm/tepid water.

Keep and wash PPE separately from other laundry.

Do not allow children or pets to enter the treated area until it has dried.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	white to light beige
Physical State	liquid
Odor	weak
Odour Threshold	no data available
pH	4.0 - 5.0 at 100 % (23 °C)
Vapor Pressure	no data available
Vapor Density (Air = 1)	no data available
Density	1.05 g/cm ³ at 20 °C

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Evapouration rate	no data available
Boiling Point	no data available
Melting / Freezing Point	no data available
Water solubility	miscible
Minimum Ignition Energy	not applicable
Decomposition temperature	no data available
Partition coefficient: n-octanol/water	no data available
Viscosity	500 - 700 cps
Flash point	> 93.4 °C
Autoignition temperature	no data available
Lower explosion limit	no data available
Upper explosion limit	no data available
Explosivity	not applicable

SECTION 10: STABILITY AND REACTIVITY

Reactivity

Thermal decomposition	no data available
Chemical stability	Stable under recommended storage conditions.
Possibility of hazardous reactions	No hazardous reactions when stored and handled according to prescribed instructions.
Conditions to avoid	Heat, flames and sparks. Elevated temperatures
Incompatible materials	no data available
Hazardous decomposition products	Nitrogen oxides (NO _x) Carbon oxides Methyl isocyanate (trace; no adverse effects expected)

SECTION 11: TOXICOLOGICAL INFORMATION

Exposure routes	Ingestion, Inhalation, Skin Absorption, Eye contact
Immediate Effects	
Eye	Causes redness, irritation, tearing. Moderate eye irritation.

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Skin	Harmful if absorbed through skin. May produce symptoms similar to those from ingestion.
Ingestion	Harmful if swallowed. This product causes reversible cholinesterase inhibition without long term effects. Repeated overexposure may cause more severe cholinesterase inhibition with more pronounced symptoms. May lead to rapid onset of nausea, vomiting, diarrhea, abdominal pain, involuntary shaking, excess salivation, pinpoint pupils, blurred vision, profuse sweating, temporary paralysis, respiratory depression, and convulsions.
Inhalation	Harmful if inhaled. May produce symptoms similar to those from ingestion.

Information on toxicological effects

Acute oral toxicity	LD50 (male/female combined rat) ca. 1,820 mg/kg
Acute inhalation toxicity	LC50 (male rat) 3.1 mg/l Exposure time: 1 h Determined in the form of liquid aerosol.
Acute dermal toxicity	LD50 (rabbit) > 2,000 mg/kg
Skin irritation	Slight irritation (rabbit)
Eye irritation	Minimally irritating. (rabbit)

Assessment repeated dose toxicity

Carbaryl caused reversible cholinesterase inhibition without long term effects in animal studies.

Assessment Mutagenicity

Carbaryl was not mutagenic or genotoxic based on the overall weight of evidence in a battery of in vitro and in vivo tests.

Assessment Carcinogenicity

Carbaryl caused at high dose levels an increased incidence of tumours in the following organ(s): liver, Thyroid, kidneys, cardio-vascular system. The mechanism that triggers tumours in rodents is not relevant for the low exposures encountered under normal use conditions.

ACGIH

Carbaryl	63-25-2	Group A4
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NTP

None.

IARC

Carbaryl	63-25-2	Overall evaluation: 3
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OSHA

None.

Assessment toxicity to reproduction

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Carbaryl did not cause reproductive toxicity in a two-generation study in rats.

Assessment developmental toxicity

Carbaryl did not cause developmental toxicity in rats and rabbits.

Further information

Only acute toxicity studies have been performed on the formulated product.
The non-acute information pertains to the active ingredient(s).

SECTION 12: ECOLOGICAL INFORMATION

Toxicity to fish	LC50 (Oncorhynchus mykiss (rainbow trout)) 3.3 mg/l Exposure time: 96 h The value mentioned relates to the active ingredient carbaryl.
Toxicity to aquatic invertebrates	EC50 (Daphnia magna (Water flea)) 0.0164 mg/l Exposure time: 48 h The value mentioned relates to the active ingredient carbaryl.
Toxicity to aquatic plants	EC50 (Pseudokirchneriella subcapitata) 1.75 mg/l Growth rate; Exposure time: 72 h The value mentioned relates to the active ingredient carbaryl.
Biodegradability	Carbaryl: ; rapidly biodegradable
Koc	Carbaryl: Koc: 624
Bioaccumulation	Carbaryl: Bioconcentration factor (BCF) 44; Does not bioaccumulate.
Mobility in soil	Carbaryl: Slightly mobile in soils
Environmental precautions	Do not apply directly to water, to areas where surface water is present or to intertidal areas below the mean high water mark. Do not contaminate surface or ground water by cleaning equipment or disposal of wastes, including equipment wash water. Do not apply when weather conditions favor runoff or drift. Drift or runoff from treated areas may adversely affect non-target plants. Apply this product as specified on the label. Do not apply this product or allow it to drift to blooming crops or weeds if bees are visiting the treatment area. Inform appropriate authorities immediately if contamination occurs.

SECTION 13: DISPOSAL CONSIDERATIONS

Waste treatment methods

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Product	It is best to use all of the product in accordance with label directions. If it is necessary to dispose of unused product, please follow container label instructions and applicable local guidelines. Never place unused product down any indoor or outdoor drain.
Contaminated packaging	Follow advice on product label and/or leaflet. Do not re-use empty containers. Triple rinse containers. Dispose of empty container in a sanitary landfill or by incineration, or, if allowed by State/Provincial and local authorities, by burning. If burned, stay out of smoke.
RCRA Information	Characterization and proper disposal of this material as a special or hazardous waste is dependent upon Federal, State and local laws and are the user's responsibility. RCRA classification may apply.

SECTION 14: TRANSPORT INFORMATION

49CFR

UN number	3082
Class	9
Packaging group	III
Marine pollutant	Marine pollutant
Proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCES, LIQUID, N.O.S. (CARBARYL)
RQ	Reportable Quantity is reached with 444 lb of product.

IMDG

UN number	3082
Class	9
Packaging group	III
Marine pollutant	YES
Proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (CARBARYL SOLUTION)

IATA

UN number	3082
Class	9
Packaging group	III
Environm. Hazardous Mark	YES
Proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (CARBARYL SOLUTION)

This transportation information is not intended to convey all specific regulatory information relating to this product. It does not address regulatory variations due to package size or special transportation requirements.

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SECTION 15: REGULATORY INFORMATION

US Federal Regulations

TSCA list

Carbaryl	63-25-2
1,2-Propanediol	57-55-6
Naphthalene and alkyl naphthalene sulphonic acids formaldehyde condensate, sodium salt	68425-94-5

US. Toxic Substances Control Act (TSCA) Section 12(b) Export Notification (40 CFR 707, Subpt D)
None.

SARA Title III - Section 302 - Notification and Information

None.

SARA Title III - Section 313 - Toxic Chemical Release Reporting

Carbaryl	63-25-2	1.0%
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US States Regulatory Reporting

CA Prop65

This product contains a chemical known to the State of California to cause cancer.

Carbaryl	63-25-2
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This product contains a chemical known to the State of California to cause birth defects or other reproductive harm.

Carbaryl	63-25-2	Developmental toxin.
Carbaryl	63-25-2	Male reproductive toxin.

US State Right-To-Know Ingredients

Carbaryl	63-25-2	CA, CT, IL, MN, NJ, RI
1,2-Propanediol	57-55-6	MN

Canadian Regulations

Canadian Domestic Substance List

Naphthalene and alkyl naphthalene sulphonic acids formaldehyde condensate, sodium salt	68425-94-5
--	------------

Environmental

CERCLA

Carbaryl	63-25-2	100 lbs
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Clean Water Section 307 Priority Pollutants

None.

Safe Drinking Water Act Maximum Contaminant Levels

None.

EPA/FIFRA Information:

This chemical is a pesticide product registered by the Environmental Protection Agency and is subject to certain labeling requirements under federal pesticide law. These requirements differ from the classification

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criteria and hazard information required for safety data sheets, and for workplace labels of non-pesticide chemicals. Following is the hazard information required on the pesticide label:

Signal word: Caution!

Hazard statements: Harmful if swallowed, inhaled or absorbed through the skin.
Avoid contact with skin, eyes and clothing.
Wash thoroughly and put on clean clothing.
Avoid breathing spray mist.
Avoid inhalation of vapour or mist.

SECTION 16: OTHER INFORMATION

NFPA 704 (National Fire Protection Association):

Health - 2 Flammability - 1 Instability - 1 Others - none

HMIS (Hazardous Materials Identification System, based on the Third Edition Ratings Guide)

Health - 1 Flammability - 1 Physical Hazard - 0 PPE -

0 = minimal hazard, 1 = slight hazard, 2 = moderate hazard, 3 = severe hazard, 4 = extreme hazard

Reason for Revision: Revised according to the current OSHA Hazard Communication Standard (29CFR1910.1200)

This information is provided in good faith but without express or implied warranty. The customer assumes all responsibility for safety and use not in accordance with label instructions.

SAFETY DATA SHEET
TALSTAR® PROFESSIONAL INSECTICIDE

SDS #: 1349-A
Revision date: 2015-04-10
Format: NA
Version 1.01



1. PRODUCT AND COMPANY IDENTIFICATION

Product Identifier

Product Name TALSTAR® PROFESSIONAL INSECTICIDE

Other means of identification

Product Code(s) 1349-A
Active Ingredient(s) Bifenthrin
Chemical Family Pyrethroid Pesticide

Recommended use of the chemical and restrictions on use

Recommended Use: Insecticide
Restrictions on Use: Use as recommended by the label

Manufacturer Address

FMC Corporation
1735 Market Street
Philadelphia, PA 19103
(215) 299-6000 (General Information)
msdsinfo@fmc.com (E-Mail General Information)

Emergency telephone number

Medical Emergencies:
1 800 / 331-3148 (PROSAR - U.S.A. & Canada)
1 651 / 632-6793 (PROSAR - All Other Countries - Collect)
For leak, fire, spill or accident emergencies, call:
1 800 / 424 9300 (CHEMTREC - U.S.A.)
1 703 / 527 3887 (CHEMTREC - Collect - All Other Countries)

2. HAZARDS IDENTIFICATION

Classification

OSHA Regulatory Status

This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200)

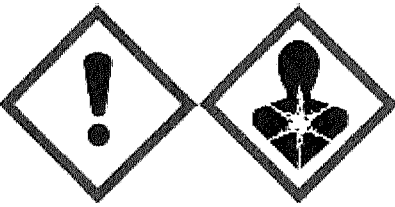
Acute toxicity - Oral	Category 4
Acute toxicity - Inhalation (Dusts/Mists)	Category 4
Carcinogenicity	Category 2
Specific target organ toxicity (single exposure)	Category 1
Specific target organ toxicity (repeated exposure)	Category 1

GHS Label elements, including precautionary statements

EMERGENCY OVERVIEW

Danger

Hazard Statements
 H302 - Harmful if swallowed
 H332 - Harmful if inhaled
 H351 - Suspected of causing cancer
 H370 - Causes damage to organs
 H372 - Causes damage to organs through prolonged or repeated exposure



Precautionary Statements - Prevention

- P202 - Do not handle until all safety precautions have been read and understood
- P281 - Use personal protective equipment as required
- P264 - Wash face, hands and any exposed skin thoroughly after handling
- P270 - Do not eat, drink or smoke when using this product
- P260 - Do not breathe dust/fume/gas/mist/vapors/spray

Precautionary Statements - Response

- P321 - Specific treatment (see supplemental first aid instructions on this label)
- P308 + P311 - IF exposed or concerned: Call a POISON CENTER or doctor
- P304 + P340 - IF INHALED: Remove person to fresh air and keep comfortable for breathing
- P312 - Call a POISON CENTER or doctor if you feel unwell
- P301 + P312 - IF SWALLOWED: Call a POISON CENTER or doctor if you feel unwell
- P330 - Rinse mouth

Precautionary Statements - Storage

- P405 - Store locked up

Precautionary Statements - Disposal

- P501 - Dispose of contents/ container to an approved waste disposal plant

Hazards not otherwise classified (HNOC)

No hazards not otherwise classified were identified.

Other Information

Very toxic to aquatic life with long lasting effects

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Family Pyrethroid Pesticide.

Chemical name	CAS-No	Weight %
Propylene glycol	57-55-6	5-10
Bifenthrin	82657-04-3	7.9

Synonyms are provided in Section 1.

4. FIRST AID MEASURES

Eye Contact	Hold eyes open and rinse slowly and gently with water for 15 to 20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Call a poison control center or doctor for further treatment advice.
Skin Contact	Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call a poison control center or doctor for further treatment advice.
Inhalation	Move to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth if possible. Call a poison control center or doctor for further treatment advice.
Ingestion	Call a poison control center or doctor immediately for treatment advice. Have person sip a glass of water if able to swallow. Do not induce vomiting unless told to do so by a poison control center or doctor. Do not give anything by mouth to an unconscious person.
Most important symptoms and effects, both acute and delayed	Central nervous system effects.
Indication of immediate medical attention and special treatment needed, if necessary	Treat symptomatically. This product is a pyrethroid. If large amounts have been ingested, the stomach and intestines should be evacuated. Treatment is symptomatic and supportive. Digestible fats, oils, or alcohol may increase absorption and so should be avoided.

5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media	Foam. Carbon dioxide (CO ₂). Dry chemical. Soft stream or water fog only if necessary.
Specific Hazards Arising from the Chemical	
<u>Explosion data</u>	
Sensitivity to Mechanical Impact	Not sensitive.
Sensitivity to Static Discharge	Not sensitive.
Protective equipment and precautions for firefighters	As in any fire, wear self-contained breathing apparatus and full protective gear.

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions	Isolate and post spill area. Wear suitable protective clothing, gloves and eye/face protection. For personal protection see section 8.
Other	For further clean-up instructions, call FMC Emergency Hotline number listed in Section 1 "Product and Company Identification" above.
Environmental Precautions	Keep people and animals away from and upwind of spill/leak. Keep material out of lakes, streams, ponds, and sewer drains.
Methods for Containment	Dike to prevent runoff. Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal.
Methods for cleaning up	Clean and neutralize spill area, tools and equipment by washing with bleach water and soap. Absorb rinsate and add to the collected waste. Waste must be classified and labeled prior to recycling or disposal. Dispose of waste as indicated in Section 13.

7. HANDLING AND STORAGE

Handling	Do not contaminate other pesticides, fertilizers, water, food, or feed by storage or disposal.
Storage	Keep in a dry, cool and well-ventilated place. Keep away from open flames, hot surfaces and sources of ignition. Keep out of reach of children and animals. Store in original container.
Incompatible products	None known

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Chemical name	British Columbia	Quebec	Ontario TWAEV	Alberta
Propylene glycol 57-55-6	-	-	TWA: 10 mg/m ³ (aerosol only) TWA: 50 ppm (aerosol and vapor) TWA: 155 mg/m ³ (aerosol and vapor)	-

Appropriate engineering controls

Engineering measures Apply technical measures to comply with the occupational exposure limits. When working in confined spaces (tanks, containers, etc.), ensure that there is a supply of air suitable for breathing and wear the recommended equipment.

Individual protection measures, such as personal protective equipment

Eye/Face Protection This product does not cause significant eye irritation or eye toxicity requiring special protection. Where there is significant potential for eye contact, wear chemical goggles and have eye flushing equipment available.

Skin and Body Protection Wear long-sleeved shirt, long pants, socks, and shoes.

Hand Protection Protective gloves

Respiratory Protection If exposure limits are exceeded or irritation is experienced, NIOSH/MSHA approved respiratory protection should be worn. Respiratory protection must be provided in accordance with current local regulations.

Hygiene measures Clean water should be available for washing in case of eye or skin contamination. Wash skin prior to eating, drinking, chewing gum or using tobacco. Shower or bathe at the end of working. Remove and wash contaminated clothing before re-use. Launder work clothing separately from regular household laundry.

General information If the product is used in mixtures, it is recommended that you contact the appropriate protective equipment suppliers

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Appearance	Beige, Liquid
Physical State	Liquid
Color	Beige
Odor	Mild
Odor threshold	No information available
pH	6.7
Melting point/freezing point	Not applicable
Boiling Point/Range	No information available
Flash point	> 65.5 °C / > 149.9 °F Tag Closed Cup
Evaporation Rate	No information available
Flammability (solid, gas)	No information available
Flammability Limit in Air	No information available
Upper flammability limit:	No information available

Lower flammability limit:	No information available
Vapor pressure	No information available
Vapor density	No information available
Density	No information available
Specific gravity	1.024 @ 20 °C
Water solubility	Dispersible in water
Solubility in other solvents	No information available
Partition coefficient	No information available
Autoignition temperature	No information available
Decomposition temperature	No information available
Viscosity, kinematic	No information available
Viscosity, dynamic	No information available
Explosive properties	No information available
Oxidizing properties	No information available
Molecular weight	No information available
Bulk density	8.53 lb/gal

10. STABILITY AND REACTIVITY

Reactivity	None under normal use conditions
Chemical Stability	Stable under recommended storage conditions.
Possibility of Hazardous Reactions	None under normal processing.
Hazardous polymerization	Hazardous polymerization does not occur.
Conditions to avoid	Heat, flames and sparks.
Incompatible materials	None known.
Hazardous Decomposition Products	Carbon oxides (COx), Hydrogen chloride, Hydrogen fluoride, Chlorine, Fluorine.

11. TOXICOLOGICAL INFORMATION

Product Information

LD50 Oral	632 mg/kg (rat)
LD50 Dermal	> 2000 mg/kg (rabbit)
LC50 Inhalation	2.895 mg/L 4 hr (rat) Estimated
Serious eye damage/eye irritation	Non-irritating.
Skin corrosion/irritation	Non-irritating.
Skin Contact	>2000
Sensitization	Non-sensitizing.

Information on toxicological effects

Symptoms Large doses of bifenthrin ingested by laboratory animals produced signs of toxicity including convulsions, tremors and bloody nasal discharge.

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Chronic toxicity	Bifenthrin: Long-term exposure caused neurotoxicity (tremors and impaired gait) in the early exposure in animal studies, but tremors disappeared with continued exposure.
Mutagenicity	Bifenthrin: Not genotoxic in laboratory studies.
Carcinogenicity	Bifenthrin: Weak treatment-related response for liver adenocarcinomas and benign bladder tumors (lesion) in male mice.
Neurological effects	Bifenthrin: Causes clinical signs of neurotoxicity (tremors, impaired gait, excessive salivation) following acute or subchronic exposure. Tremors disappeared with continued exposure.
Reproductive toxicity	Bifenthrin: No toxicity to reproduction in animal studies.

Developmental toxicity
 STOT - single exposure
 STOT - repeated exposure

Target organ effects
 Neurological effects

Aspiration hazard

Bifenthrin: Not teratogenic in animal studies.
 Causes damage to organs. See listed target organs below.
 Causes damage to organs through prolonged or repeated exposure. See listed target organs below.
 Bifenthrin: Central Nervous System.
 Bifenthrin: Causes clinical signs of neurotoxicity (tremors, impaired gait, excessive salivation) following acute or subchronic exposure. Tremors disappeared with continued exposure.
 No information available.

12. ECOLOGICAL INFORMATION

Ecotoxicity

Bifenthrin (82657-04-3)				
Active Ingredient(s)	Duration	Species	Value	Units
Bifenthrin	96 h LC50	Fish	0.1	µg/L
	72 h EC50	Algae	0.822	mg/L
	48 h EC50	Crustacea	0.11	µg/L
	21 d NOEC	Fish	0.012	µg/L
	21 d NOEC	Crustacea	0.0013	µg/L

Persistence and degradability Bifenthrin: Moderately persistent. Does not readily hydrolyze. Not readily biodegradable.

Bioaccumulation Bifenthrin: The substance has a potential for bioconcentration.

Mobility Bifenthrin: Immobile. Not expected to reach groundwater.

13. DISPOSAL CONSIDERATIONS

Waste disposal methods Improper disposal of excess pesticide, spray mixture, or rinsate is prohibited. If these wastes cannot be disposed of by use according to label instructions, contact appropriate disposal authorities for guidance.

Contaminated Packaging Containers must be disposed of in accordance with local, state and federal regulations. Refer to the product label for container disposal instructions.

14. TRANSPORT INFORMATION

DOT This material is not a hazardous material as defined by U.S. Department of Transportation at 49 CFR Parts 100 through 185.

TDG Classification below is only applicable when shipped by vessel and is not applicable when shipped by road or rail only.

UN/ID no UN3082
 Proper Shipping Name Environmentally hazardous substance, liquid, n.o.s.
 Hazard class 9
 Packing Group III
 Marine Pollutant Bifenthrin.
 Description UN3082, Environmentally hazardous substance, liquid, n.o.s. (Bifenthrin), 9 PG III

ICAO/IATA

UN/ID no UN3082
 Proper Shipping Name Environmentally hazardous substance, liquid, n.o.s.
 Hazard class 9
 Packing Group III
 Description UN3082, Environmentally hazardous substance, liquid, n.o.s. (Bifenthrin), 9 PG III
 Limited quantity 30 kg G

IMDG/IMO

UN/ID no	UN3082
Proper Shipping Name	Environmentally hazardous substance, liquid, n.o.s.
Hazard class	9
Packing Group	III
EmS No.	F-A, S-F
Marine Pollutant	Bifenthrin
Description	UN3082, Environmentally hazardous substance, liquid, n.o.s. (Bifenthrin), 9 PG III

15. REGULATORY INFORMATION

U.S. Federal Regulations

SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product contains a chemical or chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372:

Chemical name	CAS-No	Weight %	SARA 313 - Threshold Values %
Bifenthrin - 82657-04-3	82657-04-3	7.9	1.0

SARA 311/312 Hazard Categories

Acute health hazard	Yes
Chronic health hazard	Yes
Fire hazard	No
Sudden release of pressure hazard	No
Reactive Hazard	No

Clean Water Act

This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42)

CERCLA

This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material

FIFRA Information

This chemical is a pesticide product registered by the Environmental Protection Agency and is subject to certain labeling requirements under federal pesticide law. These requirements differ from the classification criteria and hazard information required for safety data sheets, and for workplace labels of non-pesticide chemicals. Following is the hazard information as required on the pesticide label:

CAUTION

*Harmful if swallowed, inhaled or absorbed through skin.
 This pesticide is extremely toxic to fish and aquatic invertebrates.*

US State Regulations

California Proposition 65

This product contains the following Proposition 65 chemicals:

Chemical name	California Prop. 65
Sodium o-phenylphenate - 132-27-4	Carcinogen

U.S. State Right-to-Know Regulations

Chemical name	New Jersey	Massachusetts	Pennsylvania
Bifenthrin 82657-04-3	X		
Propylene glycol 57-55-6	X		X

International Inventories

Component	TSCA (United States)	DSL (Canada)	EINECS/ELI NCS (Europe)	ENCS (Japan)	China (IECSC)	KECL (Korea)	PICCS (Philippines)	AICS (Australia)
Propylene glycol 57-55-6 (5-10)	X	X	X	X	X	X	X	X
Bifenthrin 82657-04-3 (7.9)				X	X	X		

Mexico - Grade Moderate risk, Grade 2

WHMIS Hazard Class D2A - Very toxic materials



16. OTHER INFORMATION

NFPA	Health Hazards 2	Flammability 0	Instability 0	Special Hazards -
HMIS	Health Hazards 2*	Flammability 0	Physical hazard 0	Personal Protection X

*Indicates a chronic health hazard.

Revision date: 2015-04-10
 Revision note: Format Change

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Prepared By:

FMC Corporation

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 2014-05-05

Issuing Date:

End of Safety Data Sheet

SAFETY DATA SHEET
TALSTAR® SELECT INSECTICIDE

SDS #: 1349-5-A
Revision date: 2015-04-13
Format: NA
Version 1



1. PRODUCT AND COMPANY IDENTIFICATION

Product Identifier

Product Name TALSTAR® SELECT INSECTICIDE

Other means of identification

Product Code(s) 1349-5-A
Active Ingredient(s) Bifenthrin
Chemical Family Pyrethroid Pesticide

Recommended use of the chemical and restrictions on use

Recommended Use: Insecticide
Restrictions on Use: Use as recommended by the label

Manufacturer Address

FMC Corporation
1735 Market Street
Philadelphia, PA 19103
(215) 299-6000 (General Information)
msdsinfo@fmc.com (E-Mail General Information)

Emergency telephone number

Medical Emergencies:
1 800 / 331-3148 (PROSAR - U.S.A. & Canada)
1 651 / 632-6793 (PROSAR - All Other Countries - Collect)
For leak, fire, spill or accident emergencies, call:
1 800 / 424 9300 (CHEMTREC - U.S.A.)
1 703 / 527 3887 (CHEMTREC - Collect - All Other Countries)

2. HAZARDS IDENTIFICATION

Classification

OSHA Regulatory Status

This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200)


Acute toxicity - Oral	Category 4
Acute toxicity - Inhalation (Dusts/Mists)	Category 4
Carcinogenicity	Category 2
Specific target organ toxicity (single exposure)	Category 1
Specific target organ toxicity (repeated exposure)	Category 1

GHS Label elements, including precautionary statements

EMERGENCY OVERVIEW

Danger

Hazard Statements
 H302 - Harmful if swallowed
 H332 - Harmful if inhaled
 H351 - Suspected of causing cancer
 H370 - Causes damage to organs
 H372 - Causes damage to organs through prolonged or repeated exposure



Precautionary Statements - Prevention

- P202 - Do not handle until all safety precautions have been read and understood
- P281 - Use personal protective equipment as required
- P264 - Wash face, hands and any exposed skin thoroughly after handling
- P270 - Do not eat, drink or smoke when using this product
- P260 - Do not breathe dust/fume/gas/mist/vapors/spray

Precautionary Statements - Response

- P321 - Specific treatment (see supplemental first aid instructions on this label)
- P308 + P311 - IF exposed or concerned: Call a POISON CENTER or doctor
- P304 + P340 - IF INHALED: Remove person to fresh air and keep comfortable for breathing
- P312 - Call a POISON CENTER or doctor if you feel unwell
- P301 + P312 - IF SWALLOWED: Call a POISON CENTER or doctor if you feel unwell
- P330 - Rinse mouth

Precautionary Statements - Storage

- P405 - Store locked up

Precautionary Statements - Disposal

- P501 - Dispose of contents/ container to an approved waste disposal plant

Hazards not otherwise classified (HNOC)

No hazards not otherwise classified were identified.

Other Information

Very toxic to aquatic life with long lasting effects

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Family Pyrethroid Pesticide.

Chemical name	CAS-No	Weight %
Propylene glycol	57-55-6	5-10
Bifenthrin	82657-04-3	7.9

Synonyms are provided in Section 1.

4. FIRST AID MEASURES

Eye Contact	Hold eyes open and rinse slowly and gently with water for 15 to 20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Call a poison control center or doctor for further treatment advice.
Skin Contact	Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call a poison control center or doctor for further treatment advice.
Inhalation	Move to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth if possible. Call a poison control center or doctor for further treatment advice.
Ingestion	Call a poison control center or doctor immediately for treatment advice. Have person sip a glass of water if able to swallow. Do not induce vomiting unless told to do so by a poison control center or doctor. Do not give anything by mouth to an unconscious person.
Most important symptoms and effects, both acute and delayed	Central nervous system effects.
Indication of immediate medical attention and special treatment needed, if necessary	Treat symptomatically. This product is a pyrethroid. If large amounts have been ingested, the stomach and intestines should be evacuated. Treatment is symptomatic and supportive. Digestible fats, oils, or alcohol may increase absorption and so should be avoided.

5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media	Foam. Carbon dioxide (CO ₂). Dry chemical. Soft stream or water fog only if necessary.
Specific Hazards Arising from the Chemical	
<u>Explosion data</u>	
Sensitivity to Mechanical Impact	Not sensitive.
Sensitivity to Static Discharge	Not sensitive.
Protective equipment and precautions for firefighters	As in any fire, wear self-contained breathing apparatus and full protective gear.

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions	Isolate and post spill area. Wear suitable protective clothing, gloves and eye/face protection. For personal protection see section 8.
Other	For further clean-up instructions, call FMC Emergency Hotline number listed in Section 1 "Product and Company Identification" above.
Environmental Precautions	Keep people and animals away from and upwind of spill/leak. Keep material out of lakes, streams, ponds, and sewer drains.
Methods for Containment	Dike to prevent runoff. Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal.
Methods for cleaning up	Clean and neutralize spill area, tools and equipment by washing with bleach water and soap. Absorb rinsate and add to the collected waste. Waste must be classified and labeled prior to recycling or disposal. Dispose of waste as indicated in Section 13.

7. HANDLING AND STORAGE

Handling	Do not contaminate other pesticides, fertilizers, water, food, or feed by storage or disposal.
Storage	Keep in a dry, cool and well-ventilated place. Keep away from open flames, hot surfaces and sources of ignition. Keep out of reach of children and animals. Store in original container.
Incompatible products	None known

8. EXPOSURE CONTROLS/PERSONAL PROTECTIONControl parameters

Chemical name	British Columbia	Quebec	Ontario TWAEV	Alberta
Propylene glycol 57-55-6	-	-	TWA: 10 mg/m ³ (aerosol only) TWA: 50 ppm (aerosol and vapor) TWA: 155 mg/m ³ (aerosol and vapor)	-

Appropriate engineering controls

Engineering measures Apply technical measures to comply with the occupational exposure limits. When working in confined spaces (tanks, containers, etc.), ensure that there is a supply of air suitable for breathing and wear the recommended equipment.

Individual protection measures, such as personal protective equipment

Eye/Face Protection This product does not cause significant eye irritation or eye toxicity requiring special protection. Where there is significant potential for eye contact, wear chemical goggles and have eye flushing equipment available.

Skin and Body Protection Wear long-sleeved shirt, long pants, socks, and shoes.

Hand Protection Protective gloves

Respiratory Protection If exposure limits are exceeded or irritation is experienced, NIOSH/MSHA approved respiratory protection should be worn. Respiratory protection must be provided in accordance with current local regulations.

Hygiene measures Clean water should be available for washing in case of eye or skin contamination. Wash skin prior to eating, drinking, chewing gum or using tobacco. Shower or bathe at the end of working. Remove and wash contaminated clothing before re-use. Launder work clothing separately from regular household laundry.

General information If the product is used in mixtures, it is recommended that you contact the appropriate protective equipment suppliers

9. PHYSICAL AND CHEMICAL PROPERTIESInformation on basic physical and chemical properties

Appearance	Beige, Liquid
Physical State	Liquid
Color	Beige
Odor	Mild
Odor threshold	No information available
pH	6.7
Melting point/freezing point	Not applicable
Boiling Point/Range	No information available
Flash point	> 65.5 °C / > 149.9 °F Tag Closed Cup
Evaporation Rate	No information available
Flammability (solid, gas)	No information available
Flammability Limit in Air	
Upper flammability limit:	No information available

Lower flammability limit:	No information available
Vapor pressure	No information available
Vapor density	No information available
Density	No information available
Specific gravity	1.024 @ 20 °C
Water solubility	Dispersible in water
Solubility in other solvents	No information available
Partition coefficient	No information available
Autoignition temperature	No information available
Decomposition temperature	No information available
Viscosity, kinematic	No information available
Viscosity, dynamic	No information available
Explosive properties	No information available
Oxidizing properties	No information available
Molecular weight	No information available
Bulk density	8.53 lb/gal

10. STABILITY AND REACTIVITY

Reactivity	None under normal use conditions
Chemical Stability	Stable under recommended storage conditions.
Possibility of Hazardous Reactions	None under normal processing.
Hazardous polymerization	Hazardous polymerization does not occur.
Conditions to avoid	Heat, flames and sparks.
Incompatible materials	None known.
Hazardous Decomposition Products	Carbon oxides (COx), Hydrogen chloride, Hydrogen fluoride, Chlorine, Fluorine.

11. TOXICOLOGICAL INFORMATION

Product Information

LD50 Oral	632 mg/kg (rat)
LD50 Dermal	> 2000 mg/kg (rabbit)
LC50 Inhalation	2.895 mg/L 4 hr (rat) Estimated
Serious eye damage/eye irritation	Non-irritating.
Skin corrosion/irritation	Non-irritating.
Skin Contact	>2000
Sensitization	Non-sensitizing.

Information on toxicological effects

Symptoms	Large doses of bifenthrin ingested by laboratory animals produced signs of toxicity including convulsions, tremors and bloody nasal discharge.
----------	--

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Chronic toxicity	Bifenthrin: Long-term exposure caused neurotoxicity (tremors and impaired gait) in the early exposure in animal studies, but tremors disappeared with continued exposure.
Mutagenicity	Bifenthrin: Not genotoxic in laboratory studies.
Carcinogenicity	Bifenthrin: Weak treatment-related response for liver adenocarcinomas and benign bladder tumors (lesion) in male mice.
Neurological effects	Bifenthrin: Causes clinical signs of neurotoxicity (tremors, impaired gait, excessive salivation) following acute or subchronic exposure. Tremors disappeared with continued exposure.
Reproductive toxicity	Bifenthrin: No toxicity to reproduction in animal studies.

Developmental toxicity
STOT - single exposure
STOT - repeated exposure
Target organ effects
 Neurological effects
Aspiration hazard

Bifenthrin: Not teratogenic in animal studies.
 Causes damage to organs. See listed target organs below.
 Causes damage to organs through prolonged or repeated exposure. See listed target organs below.
 Bifenthrin: Central Nervous System.
 Bifenthrin: Causes clinical signs of neurotoxicity (tremors, impaired gait, excessive salivation) following acute or subchronic exposure. Tremors disappeared with continued exposure.
 No information available.

12. ECOLOGICAL INFORMATION

Ecotoxicity

Bifenthrin (82657-04-3)				
Active Ingredient(s)	Duration	Species	Value	Units
Bifenthrin	96 h LC50	Fish	0.1	µg/L
	72 h EC50	Algae	0.822	mg/L
	48 h EC50	Crustacea	0.11	µg/L
	21 d NOEC	Fish	0.012	µg/L
	21 d NOEC	Crustacea	0.0013	µg/L

Persistence and degradability Bifenthrin: Moderately persistent. Does not readily hydrolyze. Not readily biodegradable.

Bioaccumulation Bifenthrin: The substance has a potential for bioconcentration.

Mobility Bifenthrin: Immobile. Not expected to reach groundwater.

13. DISPOSAL CONSIDERATIONS

Waste disposal methods Improper disposal of excess pesticide, spray mixture, or rinsate is prohibited. If these wastes cannot be disposed of by use according to label instructions, contact appropriate disposal authorities for guidance.

Contaminated Packaging Containers must be disposed of in accordance with local, state and federal regulations. Refer to the product label for container disposal instructions.

14. TRANSPORT INFORMATION

DOT This material is not a hazardous material as defined by U.S. Department of Transportation at 49 CFR Parts 100 through 185.

TDG Classification below is only applicable when shipped by vessel and is not applicable when shipped by road or rail only.

UN/ID no UN3082

Proper Shipping Name Environmentally hazardous substance, liquid, n.o.s.

Hazard class 9

Packing Group III

Marine Pollutant Bifenthrin.

Description UN3082, Environmentally hazardous substance, liquid, n.o.s. (Bifenthrin), 9 PG III

ICAO/IATA

UN/ID no UN3082

Proper Shipping Name Environmentally hazardous substance, liquid, n.o.s.

Hazard class 9

Packing Group III

Description UN3082, Environmentally hazardous substance, liquid, n.o.s. (Bifenthrin), 9 PG III

Limited quantity 30 kg G

IMDG/IMO

UN/ID no UN3082
 Proper Shipping Name Environmentally hazardous substance, liquid, n.o.s.
 Hazard class 9
 Packing Group III
 EmS No. F-A, S-F
 Marine Pollutant Bifenthrin
 Description UN3082, Environmentally hazardous substance, liquid, n.o.s. (Bifenthrin), 9 PG III

15. REGULATORY INFORMATION

U.S. Federal Regulations

SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product contains a chemical or chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372:

Chemical name	CAS-No	Weight %	SARA 313 - Threshold Values %
Bifenthrin - 82657-04-3	82657-04-3	7.9	1.0

SARA 311/312 Hazard Categories

Acute health hazard Yes
 Chronic health hazard Yes
 Fire hazard No
 Sudden release of pressure hazard No
 Reactive Hazard No

Clean Water Act

This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42)

CERCLA

This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material

FIFRA Information

This chemical is a pesticide product registered by the Environmental Protection Agency and is subject to certain labeling requirements under federal pesticide law. These requirements differ from the classification criteria and hazard information required for safety data sheets, and for workplace labels of non-pesticide chemicals. Following is the hazard information as required on the pesticide label:

CAUTION
 Harmful if swallowed, inhaled or absorbed through skin.
 This pesticide is extremely toxic to fish and aquatic invertebrates.

US State Regulations

California Proposition 65

This product contains the following Proposition 65 chemicals:

Chemical name	California Prop. 65
Sodium o-phenylphenate - 132-27-4	Carcinogen

U.S. State Right-to-Know Regulations

Chemical name	New Jersey	Massachusetts	Pennsylvania
Bifenthrin 82657-04-3	X		
Propylene glycol 57-55-6	X		X

International Inventories

Component	TSCA (United States)	DSL (Canada)	EINECS/ELI NCS (Europe)	ENCS (Japan)	China (IECSC)	KECL (Korea)	PICCS (Philippines)	AICS (Australia)
Propylene glycol 57-55-6 (5-10)	X	X	X	X	X	X	X	X
Bifenthrin 82657-04-3 (7.9)				X	X	X		

Mexico - Grade Moderate risk, Grade 2

WHMIS Hazard Class D2A - Very toxic materials



16. OTHER INFORMATION

NFPA	Health Hazards 2	Flammability 0	Instability 0	Special Hazards -
HMIS	Health Hazards 2*	Flammability 0	Physical hazard 0	Personal Protection X

*Indicates a chronic health hazard.

Revision date: 2015-04-13
 Revision note: Format Change

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Prepared By:

FMC Corporation

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 End of Safety Data Sheet

Safety Data Sheet

TERMIDOR 9.1% SC.

Revision date : 2015/04/30
Version: 5.0

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1. Identification

Product identifier used on the label

TERMIDOR 9.1% SC.

Recommended use of the chemical and restriction on use

Recommended use*: insecticide

* The "Recommended use" identified for this product is provided solely to comply with a Federal requirement and is not part of the seller's published specification. The terms of this Safety Data Sheet (SDS) do not create or infer any warranty, express or implied, including by incorporation into or reference in the seller's sales agreement.

Details of the supplier of the safety data sheet

Company:
BASF CORPORATION
100 Park Avenue
Florham Park, NJ 07932, USA

Telephone: +1 973 245-6000

Emergency telephone number

CHEMTREC: 1-800-424-9300
BASF HOTLINE: 1-800-832-HELP (4357)

Other means of identification

Substance number:	256709
EPA Register number:	7969-210
Molecular formula:	C ₁₂ H ₄ Cl ₂ F ₆ N ₄ O S
Chemical family:	phenyl pyrazole
Synonyms:	fipronil

2. Hazards Identification

According to Regulation 2012 OSHA Hazard Communication Standard; 29 CFR Part 1910.1200

Classification of the product

Acute Tox.	4 (Inhalation - vapour)	Acute toxicity
Acute Tox.	4 (oral)	Acute toxicity
STOT RE	2	Specific target organ toxicity — repeated exposure

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Label elements

Pictogram:



Signal Word:
Warning

Hazard Statement:

H332	Harmful if inhaled.
H302	Harmful if swallowed.
H373	May cause damage to organs through prolonged or repeated exposure.

Precautionary Statements (Prevention):

P271	Use only outdoors or in a well-ventilated area.
P261	Avoid breathing vapours.
P260	Do not breathe dust/gas/mist/vapours.
P270	Do not eat, drink or smoke when using this product.
P264	Wash with plenty of water and soap thoroughly after handling.

Precautionary Statements (Response):

P312	Call a POISON CENTER or doctor/physician if you feel unwell.
P304 + P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P314	Get medical advice/attention if you feel unwell.
P330	Rinse mouth.

Precautionary Statements (Disposal):

P501	Dispose of contents/container to hazardous or special waste collection point.
------	---

Hazards not otherwise classified

Labeling of special preparations (GHS):

The following percentage of the mixture consists of components(s) with unknown hazards regarding the acute toxicity: 3 % dermal

The following percentage of the mixture consists of components(s) with unknown hazards regarding the acute toxicity: 5 % Inhalation - vapour

The following percentage of the mixture consists of components(s) with unknown hazards regarding the acute toxicity: 5 % Inhalation - mist

According to Regulation 1994 OSHA Hazard Communication Standard; 29 CFR Part 1910.1200

Emergency overview

CAUTION:

HARMFUL IF SWALLOWED.

HARMFUL IF ABSORBED THROUGH SKIN.

HARMFUL IF INHALED.

Causes eye irritation.

Do not get in eyes, on skin, or on clothing.

Do not breathe vapours/mists.

Wash thoroughly after handling.

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3. Composition / Information on Ingredients

According to Regulation 2012 OSHA Hazard Communication Standard; 29 CFR Part 1910.1200

<u>CAS Number</u>	<u>Content (W/W)</u>	<u>Chemical name</u>
120068-37-3	9.1 %	fipronil
137-20-2	0.3 - 1.0 %	Ethanesulfonic acid, 2-[methyl(1-oxo-9-octadecenyl)amino]-, sodium salt, (Z)-
2634-33-5	< 0.1 %	1,2-benzisothiazol-3(2H)-one

According to Regulation 1994 OSHA Hazard Communication Standard; 29 CFR Part 1910.1200

<u>CAS Number</u>	<u>Content (W/W)</u>	<u>Chemical name</u>
120068-37-3	9.1 %	fipronil
57-55-6	3.0 %	Propylene glycol
	87.9 %	Proprietary ingredients

4. First-Aid Measures

Description of first aid measures

General advice:

First aid providers should wear personal protective equipment to prevent exposure. Remove contaminated clothing. Move person to fresh air. If person is not breathing, call 911 or ambulance, then give artificial respiration, preferably mouth-to-mouth if possible. Call a poison control center or physician for treatment advice. Have the product container or label with you when calling a poison control center or doctor or going for treatment.

If inhaled:

Remove the affected individual into fresh air and keep the person calm.

If on skin:

Rinse skin immediately with plenty of water for 15 - 20 minutes.

If in eyes:

Hold eyes open and rinse slowly and gently with water for 15 to 20 minutes. Remove contact lenses, if present, after first 5 minutes, then continue rinsing.

If swallowed:

Never induce vomiting or give anything by mouth if the victim is unconscious or having convulsions. Do not induce vomiting. Have person sip a glass of water if able to swallow.

Most important symptoms and effects, both acute and delayed

Symptoms: CNS stimulation, tremors, convulsions

Hazards: All injection injuries must be treated as potential threats to the future viability of the hand, foot, or limb. Injection wounds containing dirt, leather, product or other infectious detritus should be considered dangerous to the viability of the hand, foot or limb. Surgical exploration and debridement may be required.

Indication of any immediate medical attention and special treatment needed

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Note to physician

Antidote: No known specific antidote.
Treatment: Treat symptomatically. Anticonvulsant therapy as routinely administered to humans. Based on animal studies diazepam and phenobarbital prevented convulsions. Due to the slow elimination of the active compound and its metabolites, the treatment must be continued for several days, gradually decreasing the dose of anticonvulsant based on the clinical response.

5. Fire-Fighting Measures

Extinguishing media

Suitable extinguishing media:
foam, dry powder, carbon dioxide, water spray

Special hazards arising from the substance or mixture

Hazards during fire-fighting:
carbon monoxide, carbon dioxide, hydrogen fluoride, Hydrogen chloride, nitrogen oxides, sulfur oxides, acid halides
If product is heated above decomposition temperature, toxic vapours will be released. The substances/groups of substances mentioned can be released if the product is involved in a fire.

Advice for fire-fighters

Protective equipment for fire-fighting:
Wear self-contained breathing apparatus and chemical-protective clothing.

Further information:

In case of fire and/or explosion do not breathe fumes. Keep containers cool by spraying with water if exposed to fire. Collect contaminated extinguishing water separately, do not allow to reach sewage or effluent systems. Dispose of fire debris and contaminated extinguishing water in accordance with official regulations.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

Take appropriate protective measures. Clear area. Shut off source of leak only under safe conditions. Extinguish sources of ignition nearby and downwind. Ensure adequate ventilation. Wear suitable personal protective clothing and equipment.

Environmental precautions

Do not discharge into the subsoil/soil. Do not discharge into drains/surface waters/groundwater. Contain contaminated water/firefighting water.

Methods and material for containment and cleaning up

Dike spillage. Pick up with suitable absorbent material. Place into suitable containers for reuse or disposal in a licensed facility. Spilled substance/product should be recovered and applied according to label rates whenever possible. If application of spilled substance/product is not possible, then spills should be contained, solidified, and placed in suitable containers for disposal. After decontamination, spill area can be washed with water. Collect wash water for approved disposal.

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7. Handling and Storage

Precautions for safe handling

RECOMMENDATIONS ARE FOR MANUFACTURING, COMMERCIAL BLENDING, AND PACKAGING WORKERS. PESTICIDE APPLICATORS & WORKERS must refer to the Product Label and Directions for Use attached to the product for Agricultural Use Requirements in accordance with the EPA Worker Protection Standard 40 CFR part 170. Ensure adequate ventilation. Provide good ventilation of working area (local exhaust ventilation if necessary). Keep away from sources of ignition - No smoking. Keep container tightly sealed. Protect contents from the effects of light. Protect against heat. Protect from air. Handle and open container with care. Do not open until ready to use. Once container is opened, content should be used as soon as possible. Avoid aerosol formation. Avoid dust formation. Provide means for controlling leaks and spills. Do not return residues to the storage containers. Follow label warnings even after container is emptied. The substance/ product may be handled only by appropriately trained personnel. Avoid all direct contact with the substance/product. Avoid contact with the skin, eyes and clothing. Avoid inhalation of dusts/mists/vapours. Wear suitable personal protective clothing and equipment.

Protection against fire and explosion:

The relevant fire protection measures should be noted. Fire extinguishers should be kept handy. Avoid all sources of ignition: heat, sparks, open flame. Sources of ignition should be kept well clear. Avoid extreme heat. Keep away from oxidizable substances. Electrical equipment should conform to national electric code. Ground all transfer equipment properly to prevent electrostatic discharge. Electrostatic discharge may cause ignition.

Conditions for safe storage, including any incompatibilities

Segregate from incompatible substances. Segregate from foods and animal feeds. Segregate from textiles and similar materials.

Further information on storage conditions: Keep only in the original container in a cool, dry, well-ventilated place away from ignition sources, heat or flame. Protect containers from physical damage. Protect against contamination. The authority permits and storage regulations must be observed.

Protect from temperatures below: 0 °C

Changes in the properties of the product may occur if substance/product is stored below indicated temperature for extended periods of time.

Protect from temperatures above: 40 °C

Changes in the properties of the product may occur if substance/product is stored above indicated temperature for extended periods of time.

8. Exposure Controls/Personal Protection

Users of a pesticidal product should refer to the product label for personal protective equipment requirements.

Advice on system design:

Whenever possible, engineering controls should be used to minimize the need for personal protective equipment.

Personal protective equipment

RECOMMENDATIONS FOR MANUFACTURING, COMMERCIAL BLENDING, AND PACKAGING WORKERS:

Respiratory protection:

Wear respiratory protection if ventilation is inadequate. Wear a NIOSH-certified (or equivalent) organic vapour/particulate respirator. For situations where the airborne concentrations may exceed the level for which an air purifying respirator is effective, or where the levels are unknown or

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Immediately Dangerous to Life or Health (IDLH), use NIOSH-certified full facepiece pressure demand self-contained breathing apparatus (SCBA) or a full facepiece pressure demand supplied-air respirator (SAR) with escape provisions.

Hand protection:

Chemical resistant protective gloves, Protective glove selection must be based on the user's assessment of the workplace hazards.

Eye protection:

Safety glasses with side-shields. Tightly fitting safety goggles (chemical goggles). Wear face shield if splashing hazard exists.

Body protection:

Body protection must be chosen depending on activity and possible exposure, e.g. head protection, apron, protective boots, chemical-protection suit.

General safety and hygiene measures:

Wear long sleeved work shirt and long work pants in addition to other stated personal protective equipment. Work place should be equipped with a shower and an eye wash. Handle in accordance with good industrial hygiene and safety practice. Personal protective equipment should be decontaminated prior to reuse. Gloves must be inspected regularly and prior to each use. Replace if necessary (e.g. pinhole leaks). Take off immediately all contaminated clothing. Store work clothing separately. Hands and/or face should be washed before breaks and at the end of the shift. No eating, drinking, smoking or tobacco use at the place of work. Keep away from food, drink and animal feeding stuffs.

9. Physical and Chemical Properties

Form:	suspension	
Odour:	characteristic	
Odour threshold:		Not determined since harmful by inhalation.
Colour:	beige	
pH value:	7.2	(10 g/l)
onset of boiling:	approx. 100 °C	(1,013 hPa) Information applies to the solvent.
Flash point:	> 206.96 °F	
Lower explosion limit:		As a result of our experience with this product and our knowledge of its composition we do not expect any hazard as long as the product is used appropriately and in accordance with the intended use.
Upper explosion limit:		As a result of our experience with this product and our knowledge of its composition we do not expect any hazard as long as the product is used appropriately and in accordance with the intended use.
Autoignition:		Information applies to the solvent. not applicable
Vapour pressure:	approx. 23.3 hPa	(20 °C) Information applies to the solvent.
Density:	1.06 g/cm3	(20 °C)
Vapour density:		not applicable
Partitioning coefficient n-octanol/water (log Pow):		not applicable

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Self-ignition temperature:	not self-igniting
Thermal decomposition:	carbon monoxide, carbon dioxide, nitrogen oxide, Hydrogen chloride, hydrogen fluoride, Sulphur dioxide Stable at ambient temperature. If product is heated above decomposition temperature toxic vapours may be released. If product is heated above decomposition temperature hazardous fumes may be released.
Viscosity, dynamic:	approx. 1,600 - 1,850 mPa.s (21.6 °C)
Solubility in water:	dispersible
Molar mass:	437.15 g/mol
Evaporation rate:	not applicable
Other Information:	If necessary, information on other physical and chemical parameters is indicated in this section.

10. Stability and Reactivity

Reactivity

No hazardous reactions if stored and handled as prescribed/indicated.

Corrosion to metals:

Corrosive effects to metal are not anticipated.

Oxidizing properties:

Not an oxidizer.

not fire-propagating

Chemical stability

The product is stable if stored and handled as prescribed/indicated.

Possibility of hazardous reactions

The product is chemically stable.

Hazardous polymerization will not occur. No hazardous reactions if stored and handled as prescribed/indicated.

Conditions to avoid

Avoid all sources of ignition: heat, sparks, open flame. Avoid prolonged storage. Avoid electro-static discharge. Avoid contamination. Avoid prolonged exposure to extreme heat. Avoid extreme temperatures.

Incompatible materials

strong acids, strong oxidizing agents, strong bases

strong oxidizing agents

Hazardous decomposition products

Decomposition products:

Hazardous decomposition products: No hazardous decomposition products if stored and handled as prescribed/indicated., Prolonged thermal loading can result in products of degradation being given off.

Thermal decomposition:

Possible thermal decomposition products:

carbon monoxide, carbon dioxide, nitrogen oxide, Hydrogen chloride, hydrogen fluoride, Sulphur dioxide

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Stable at ambient temperature. If product is heated above decomposition temperature toxic vapours may be released. If product is heated above decomposition temperature hazardous fumes may be released.

11. Toxicological information

Primary routes of exposure

Routes of entry for solids and liquids are ingestion and inhalation, but may include eye or skin contact. Routes of entry for gases include inhalation and eye contact. Skin contact may be a route of entry for liquefied gases.

Acute Toxicity/Effects

Acute toxicity

Assessment of acute toxicity: Slightly toxic after single ingestion. Slightly toxic after short-term skin contact. Slightly toxic after short-term inhalation.

Oral

Type of value: LD50
Species: rat
Value: 1,999 mg/kg

Inhalation

Type of value: LC50
Species: rat
Value: > 1.7 mg/l
Exposure time: 4 h

Type of value: LC50

Species: rat
Value: 6.8 mg/l (calculated)
Exposure time: 1 h

Dermal

Type of value: LD50
Species: rat
Value: > 2,000 mg/kg

Irritation / corrosion

Assessment of irritating effects: May cause slight irritation to the skin. May cause moderate but temporary irritation to the eyes.

Skin

Species: rabbit
Result: Slightly irritating.

Eye

Species: rabbit
Result: Slightly irritating.

Sensitization

Assessment of sensitization: Skin sensitizing effects were not observed in animal studies.

Species: guinea pig
Result: Non-sensitizing.

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Chronic Toxicity/Effects

Repeated dose toxicity

Assessment of repeated dose toxicity: Harmful: danger of serious damage to health by prolonged exposure if swallowed.

Genetic toxicity

Assessment of mutagenicity: Not classified, due to lack of data.

Information on: fipronil

Assessment of mutagenicity: Results from a number of mutagenicity studies with microorganisms, mammalian cell culture and mammals are available. Taking into account all of the information, there is no indication that the substance is mutagenic.

Carcinogenicity

Assessment of carcinogenicity: The product has not been tested. The statement has been derived from the properties of the individual components. The results of various animal studies gave no indication of a carcinogenic effect.

Information on: fipronil

Assessment of carcinogenicity: In long-term studies in rats the substance induced thyroid tumors. In long-term studies in rodents exposed to high doses, a tumorigenic effect was found; however, these results are thought to be due to a rodent-specific liver effect that is not relevant to humans.

Reproductive toxicity

Information on: fipronil

Assessment of reproduction toxicity: Animal studies gave no indication of a developmental toxic effect at doses that were not toxic to the parental animals.

Teratogenicity

Assessment of teratogenicity: The product has not been tested. The statement has been derived from the properties of the individual components. Animal studies gave no indication of a developmental toxic effect at doses that were not toxic to the parental animals.

Symptoms of Exposure

CNS stimulation, tremors, convulsions

Medical conditions aggravated by overexposure

Individuals with pre-existing diseases of the respiratory system, skin or eyes may have increased susceptibility to excessive exposures.

12. Ecological Information

Toxicity

Aquatic toxicity

Assessment of aquatic toxicity:

Very toxic (acute effect) to aquatic organisms.

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Toxicity to fish

LC50 (96 h) 3.89 mg/l, *Brachydanio rerio*

Aquatic invertebrates

EC50 (48 h) 0.2 mg/l, *Daphnia pulex*

Aquatic plants

Information on: fipronil

EC50 (96 h) 0.068 mg/l (biomass), *Scenedesmus subspicatus*

EC50 (336 h) > 0.160 mg/l, *Lemna minor*

EC50 (120 h) > 0.140 mg/l, *Selenastrum capricornutum*

EC50 (120 h) > 0.170 mg/l, *Anabaena flos-aquae*

EC50 (120 h) > 0.120 mg/l, *Navicula sp.*

Assessment of terrestrial toxicity

With high probability not acutely harmful to terrestrial organisms.

Other terrestrial non-mammals

Information on: fipronil

LD50 (48 d) 0,00593 ug/bee (contact), *Apis mellifera*

LD50 (48 d) 0,00417 ug/bee (oral), *Apis mellifera*

Persistence and degradability

Elimination information

Not readily biodegradable (by OECD criteria).

Mobility in soil

Assessment transport between environmental compartments

The product has not been tested. The statement has been derived from the properties of the individual components.

Additional information

Other ecotoxicological advice:

The ecological data given are those of the active ingredient. Do not release untreated into natural waters.

13. Disposal considerations

Waste disposal of substance:

Pesticide wastes are regulated. Improper disposal of excess pesticide, spray mix or rinsate is a violation of federal law. If pesticide wastes cannot be disposed of according to label instructions, contact the State Pesticide or Environmental Control Agency or the Hazardous Waste representative at the nearest EPA Regional Office for guidance.

Container disposal:

Contaminated packaging should be emptied as far as possible and disposed of in the same manner as the substance/product.

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Rinse thoroughly at least three times (triple rinse) in accordance with EPA recommendations. Consult state or local disposal authorities for approved alternative procedures such as container recycling. Recommend crushing, puncturing or other means to prevent unauthorized use of used containers.

RCRA:

This product is not regulated by RCRA.

14. Transport Information

Land transport

USDOT

Not classified as a dangerous good under transport regulations

Sea transport

IMDG

Hazard class: 9
Packing group: III
ID number: UN 3082
Hazard label: 9, EHSM
Marine pollutant: YES
Proper shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (contains FIPRONIL 9%)

Air transport

IATA/ICAO

Hazard class: 9
Packing group: III
ID number: UN 3082
Hazard label: 9, EHSM
Proper shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (contains FIPRONIL 9%)

15. Regulatory Information

Federal Regulations

Registration status:

Chemical TSCA, US blocked / not listed

Crop Protection TSCA, US released / exempt

EPCRA 311/312 (Hazard categories): Acute; Chronic

State regulations

State RTK

PA

CAS Number

57-55-6

Chemical name

Propylene glycol

NFPA Hazard codes:

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Health : 2 Fire: 1 Reactivity: 1 Special:

Labeling requirements under FIFRA

This chemical is a pesticide product registered by the Environmental Protection Agency and is subject to certain labeling requirements under federal pesticide law. These requirements differ from the classification criteria and hazard information required for safety data sheets, and workplace labels of non-pesticide chemicals. Following is the hazard information as required on the pesticide label.

CAUTION:

HARMFUL IF SWALLOWED.

HARMFUL IF ABSORBED THROUGH SKIN.

HARMFUL IF INHALED.

Causes eye irritation.

Do not get in eyes, on skin, or on clothing.

Do not breathe vapours/mists.

Wash thoroughly after handling.

16. Other Information

SDS Prepared by:

BASF NA Product Regulations

SDS Prepared on: 2015/04/30

We support worldwide Responsible Care® initiatives. We value the health and safety of our employees, customers, suppliers and neighbors, and the protection of the environment. Our commitment to Responsible Care is integral to conducting our business and operating our facilities in a safe and environmentally responsible fashion, supporting our customers and suppliers in ensuring the safe and environmentally sound handling of our products, and minimizing the impact of our operations on society and the environment during production, storage, transport, use and disposal of our products.

IMPORTANT: WHILE THE DESCRIPTIONS, DESIGNS, DATA AND INFORMATION CONTAINED HEREIN ARE PRESENTED IN GOOD FAITH AND BELIEVED TO BE ACCURATE , IT IS PROVIDED FOR YOUR GUIDANCE ONLY. BECAUSE MANY FACTORS MAY AFFECT PROCESSING OR APPLICATION/USE, WE RECOMMEND THAT YOU MAKE TESTS TO DETERMINE THE SUITABILITY OF A PRODUCT FOR YOUR PARTICULAR PURPOSE PRIOR TO USE. NO WARRANTIES OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, ARE MADE REGARDING PRODUCTS DESCRIBED OR DESIGNS, DATA OR INFORMATION SET FORTH, OR THAT THE PRODUCTS, DESIGNS, DATA OR INFORMATION MAY BE USED WITHOUT INFRINGING THE INTELLECTUAL PROPERTY RIGHTS OF OTHERS. IN NO CASE SHALL THE DESCRIPTIONS, INFORMATION, DATA OR DESIGNS PROVIDED BE CONSIDERED A PART OF OUR TERMS AND CONDITIONS OF SALE. FURTHER, YOU EXPRESSLY UNDERSTAND AND AGREE THAT THE DESCRIPTIONS, DESIGNS, DATA, AND INFORMATION FURNISHED BY OUR COMPANY HEREUNDER ARE GIVEN GRATIS AND WE ASSUME NO OBLIGATION OR LIABILITY FOR THE DESCRIPTION, DESIGNS, DATA AND INFORMATION GIVEN OR RESULTS OBTAINED, ALL SUCH BEING GIVEN AND ACCEPTED AT YOUR RISK.
END OF DATA SHEET

TRIACT® 70

EPA Registration Number: 70051-2-59807

1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

Product identifier

Trade name : TRIACT® 70

EPA Registration No. : 70051-2-59807

Product type : Emulsifiable Concentrate

Active Ingredient : Clarified Hydrophobic
Extract of Neem Oil

CAS No. : 947173-77-5

Relevant identified uses of the substance or mixture and uses advised against

Identified uses: : Insecticide, Miticide and
Fungicide

Uses advised against : All uses not listed on
the label

Company information : OHP, Inc.
PO Box 51230
Mainland, PA 19451
(800) 659-6745

Emergency telephone number

TRANSPORTATION EMERGENCY

(24 hours a day) call : Chemtrec: 1-800-424-9300

MEDICAL EMERGENCY (24 hours a day) and Product

Information call : 1-800-356-4647

SDS Information or

Request : ohp.com

2. HAZARDS IDENTIFICATION

Classification of the substance or mixture

Hazard Classification : Not classified as
hazardous by OSHA

EPA Signal Word : Caution* (refer to
section 15)

Hazard Statements : None

Pictogram : None

Precautionary Statements . . . : Harmful if absorbed
through the skin. Causes moderate eye irritation.
Avoid contact with skin, eyes, or clothing. Wash thor-
oughly with soap and water after handling and before
eating, drinking, chewing gum or using tobacco. Re-
move and wash contaminated clothing before reuse.

Other Hazards : Do not use or store near
heat or flame.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance

Ingredient	CAS#	% by weight
Clarified Hydrophobic Extract of Neem oil	947173-77-5	70

4. FIRST AID MEASURES

Description of first aid measures

Generic measures : Call poison control center
or doctor for treatment advice. Have the product con-
tainer or label with you when you calling the poison
control center or doctor or going for treatment.

Eye Contact : Hold eye open and rinse
slowly and gently for 15-20 minutes. Remove contact
lenses after 5 minutes if present and continue rinsing
eye.

Skin Contact : Remove contaminated
clothing and wash with plenty of water for 15-20 min-
utes.

Inhalation : Call poison control center
or doctor for treatment advice.

Ingestion : Call poison control center
or doctor for treatment advice.

Most important symptoms and effects,
both acute and delayed . . . : Eye and skin irritation

Indication of any immediate medical attention and
special treatment needed . . : None known

5. FIREFIGHTING MEASURES

Extinguishing media

Suitable Extinguishing

Media : Dry chemical, foam,
carbon dioxide

Unsuitable Extinguishing

Media : water

Special hazards arising from the substance or mixture

Hazardous combustion

products : None known

Advice for firefighters

Protection of

Firefighters : Not determined

TRIACT® 70

EPA Registration Number: 70051-2-59807

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

For non-emergency

personnel: Same as applicators and handlers* see section 8

For emergency

responders: Same as applicators and handlers* see section 8

Environmental precautions

This product is hazardous to fish and aquatic vertebrates. For terrestrial uses: Do not apply directly to water or to areas where surface water is present, or to intertidal areas below the mean high water mark.

This product is toxic to bees exposed to direct treatment. Do not apply this product while bees are actively visiting the treatment area.

Methods and material for containment and cleaning up

Methods for

Containment: Do not use in a manner that would allow drift or rinse water from equipment cleaning to contaminate water sources or supplies.

Methods for Clean-Up: None specified

Other Information: None

Reference to other sections

See Section 8 for occupational exposure limits and risk management measures. Refer to Section 13 for disposal considerations.

7. HANDLING AND STORAGE

Precautions for safe handling

The following equipment should be worn by handlers, applicators

Long sleeved shirt, long pants,
Chemical resistant gloves (such as barrier laminate, butyl rubber, nitrile rubber, neoprene rubber, or poly vinyl chloride)

Shoes plus socks

Follow manufactures instructions for cleaning and maintaining PPE. If no such instructions for washables use detergent and hot water. Keep and wash PPE separately from other laundry

Conditions for safe storage, including any incompatibilities

Keep in original container. Store in a dry place, away from direct sunlight, feed, or foodstuffs. Keep container tightly sealed when not in use. Do not store below 40°F (4°C).

Specific end use(s): Use only as specified on label.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Control parameters

OSHA Permissible Exposure

Limits (PELs): Not determined

ACGIH Threshold

Limit Values: Not determined

Other Exposure Limits: Not determined

Exposure controls

Engineering Controls: None specified

Personal Protective Equipment

Eye/Face Protection: Not specified

Skin Protection: Long pants, long sleeved shirt, socks and shoes

Hand Protection: chemical resistant gloves (such as barrier laminate, butyl rubber, nitrile rubber, neoprene rubber, or poly vinyl chloride)

Body Protection: Coveralls

Respiratory Protection: None specified

Thermal Hazards: None specified

General Hygiene

Considerations: Avoid contact with skin, eyes, or clothing. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum or using tobacco. Remove and wash contaminated clothing before reuse.

Environmental exposure

controls: For terrestrial use only: Do not apply directly to water or to areas where surface water is present, or to inter tidal areas below the mean high water mark. This product is toxic to bees exposed to direct treatment. Do not apply this product while bees are actively visiting the treatment area.

TRIACT® 70

EPA Registration Number: 70051-2-59807

9. INFORMATION ON BASIC PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Appearance : Brown liquid
 Odour : Citrus/garlic
 Odour Threshold : Not determined
 pH 1% dilution : 4.5-6.5
 Melting Point / Freezing Point : 37°F (3°C)
 Initial Boiling Point : >275° F
 Boiling Range : Not determined
 Flash Point: : 140°F (60°C)
 Evaporation Rate : Not determined
 Flammability (solid, gas) : Not applicable
 Lower & Upper Flammability Limits : Not applicable
 Vapour Pressure : Not determined
 Volatility by weight : 25%
 Density : 0.86-0.95 g/ml
 Solubility : Not determined
 Partition Coefficient (n-octanol/water) : Not determined
 Auto-ignition Temperature : Not determined
 Decomposition Temperature : Not determined
 Viscosity : Not determined
 Explosive Properties : None known
 Oxidising Properties : None known
 Other information : Not available.

10. STABILITY AND REACTIVITY

Reactivity : None known
 Chemical stability : Stable
 Possibility of hazardous reactions : None known
 Conditions to avoid : Low temperatures
 Incompatible materials : None known
 Hazardous decomposition products : None known

11. TOXICOLOGICAL INFORMATION

Information on toxicological effects

Acute Toxicity

Toxicological information on the substance or mixture

LD₅₀ (oral) : > 5000 mg/kg (test with similar product containing higher concentration of the same active ingredient)
 LD₅₀ (dermal) : > 2000 mg/kg (test with similar product containing higher concentration of the same active ingredient)
 LC₅₀ (inhalation) : > 6.17 ± 1.23 mg/L (test with similar product containing higher concentration of the same active ingredient)

Skin corrosion / irritation: Slightly irritating, Toxicity Category IV (test with similar product containing higher concentration of the same active ingredient)

Eye irritation : Minimally irritating, Toxicity Category III (test with similar product containing higher concentration of the same active ingredient)

Respiratory or skin sensitization : Mildly sensitizing (test with similar product containing high concentration of the same AI)

Other information on adverse health effects:

Carcinogenicity

NTP Listed : Not applicable
 IARC Listed : Not applicable
 OSHA : Not applicable

Reference to other sections

See Section 4 for symptoms and acute and delayed effects.

12. ECOLOGICAL INFORMATION

Toxicity

Test species	Test method	Test substance	LC ₅₀
Bobwhite Quail	14-day acute oral	Active Ingredient	LD ₅₀ > 2,150 mg a.i./kg body weight
<i>Pimephales promelas</i> (Fathead Minnow)	96-hour	Active Ingredient	NOEC 96-hour: 2,000 mg/L
<i>Daphnia magna</i>	48-hour	Active Ingredient	NOEC 48-hour: 2,000 mg/L
<i>Apis mellifera</i> L.	This product is highly toxic to bees exposed to direct treatment. Do not apply when bees are actively visiting the treatment area.		

TRIACT® 70

EPA Registration Number: 70051-2-59807

Persistence and degradability : Neem oil degrades rapidly and does not persist in the environment.

Bioaccumulative potential . . : Neem oil is not intended for use in aquatic environments. Appropriate cautions are required for use around bodies of water.

Mobility in soil : No data available.

Other adverse effects : No data available.

- for containers greater than 5 gallons-

Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank. Fill the container ¼ full with water. Replace and tighten closures. Tip container on its side and roll it back and forth, ensuring at least one complete revolution, for 30 seconds. Stand the container on its end and tip back and forth several times. Turn the container over onto its other end and tip it back and forth several times. Empty the rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Repeat this procedure two more times.

Then offer for recycling, if available, or puncture and dispose of in a sanitary landfill, or by incineration, or if allowed by state and local authorities, by burning. If burned, stay out of smoke.

13. DISPOSAL CONSIDERATIONS

Waste treatment methods

Disposal Instructions : Do not contaminate water, food, or feed by storage and disposal.

Pesticide Storage. : Keep in original container. Store in a dry place, away from direct sunlight, feed, or foodstuffs. Keep container tightly sealed when not in use. Do not store below 40°F (4°C).

Pesticide Disposal. : Wastes resulting from the use of this product must be disposed of on-site or at an approved waste disposal facility.

Container Handling : Non-refillable container. Do not reuse or refill this container.

- for containers equal to or less than 5 gallons-

Triple rinse container (or equivalent) promptly after emptying. Triple rinse as following: Empty the remaining contents into application equipment or a mix tank and drain for 10 seconds after the flow begins to drip. Fill the container ¼ full with water and recap. Shake for 10 seconds. Pour rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Drain for 10 seconds after the flow begins to drip. Repeat this procedure two more times. Then offer for recycling, if available or puncture and dispose of in a sanitary landfill, or by incineration, or if allowed by state and local authorities, by burning. If burned, stay out of smoke.

14. TRANSPORTATION INFORMATION

UN number : Not regulated.

UN proper shipping name . . : Not regulated.

Transport hazard class(es) : Not regulated.

Packing group : Not regulated.

Environmental hazards : Not regulated.

Special precautions for user : Not regulated.

TRIACT® 70

EPA Registration Number: 70051-2-59807

15. REGULATORY INFORMATION

**Safety, health and environmental regulations/
legislation specific for the substance or mixture**

EPA: This product is a pesticide product registered by the United States Environmental Protection Agency and is subject to certain labeling requirements under federal pesticide law. These requirements differ from the classification criteria and hazard information required for safety data sheets (SDS), and for workplace labels of non-pesticidal chemicals. The hazard information required on the pesticide label is reproduced below. The pesticide label also includes other important information, including directions for use.

CAUTION, KEEP OUT OF REACH OF CHILDREN

Harmful if absorbed through the skin. Causes moderate eye irritation.

This product is hazardous to fish and aquatic invertebrates.

This product is highly toxic to bees exposed to direct treatment.

OSHA: N/A

TSCA Status: Exempt

**CERCLA Reportable
Quantity**: N/A

SARA Title III:

Section 302: N/A

Section 311/312: N/A

Section 313: N/A

RCRA Status: N/A

16. OTHER INFORMATION

Disclaimer:

To the best of our knowledge, the information contained herein is accurate. However, neither OHP, Inc. nor any of its subsidiaries assume any liability whatsoever for the accuracy or completeness of the information contained herein. Final determination of suitability of any material is the sole responsibility of the user. All material may present unknown health hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards which exist.

SDS Authoring Information:

Revision date: March 23, 2015

Reason for Revision: OSHA Hazard Communication Standard 2012

Triact is a registered trademark of Certis USA L.L.C.





1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Name: TRISTAR™ 8.5 SL
EPA Reg. No.: 8033-106-1001
Product Type: Insecticide

Company Name: Nufarm Americas, Inc.
11901 S. Austin Avenue
Alsip, IL 60803
1-800-345-3330

Telephone Numbers: For Chemical Emergency, Spill, Leak, Fire, Exposure, or Accident,
Call CHEMTREC Day or Night: 1-800-424-9300
For Medical Emergencies Only, Call 1-877-325-1840

This product is an EPA FIFRA registered pesticide. Some classifications on this SDS are not exactly the same as on the FIFRA label. Certain sections are superseded by federal law governed by EPA for a registered pesticide. Please see Section 15. REGULATORY INFORMATION for explanation.

2. HAZARDS IDENTIFICATION

HEALTH HAZARDS: Acute Oral Toxicity Category 4

ENVIRONMENTAL HAZARDS: Hazardous to aquatic environment, acute Category 3

SIGNAL WORD: WARNING

HAZARD STATEMENTS: Harmful if swallowed. Harmful to aquatic life.



PRECAUTIONARY STATEMENTS

Wash thoroughly after handling. Do not eat, drink or smoke when using this product. Avoid release to the environment.

IF SWALLOWED: Call a POISON CENTER or doctor if you feel unwell. Rinse mouth.

Dispose of contents in accordance with local, state, and federal regulations.

3. COMPOSITION / INFORMATION ON INGREDIENTS

COMPONENTS	CAS NO.	% BY WEIGHT
Acetamiprid	135410-20-7	8.11 – 8.97
Other Ingredients	Trade Secret	Trade Secret

Synonyms: Acetamiprid

Ingredients not precisely identified are proprietary or non-hazardous. Values are not product specifications.

4. FIRST AID MEASURES

If in Eyes: Hold eye open and rinse slowly and gently with water for several minutes. Remove contact lenses, if present, then continue rinsing eye. Call a poison control center or doctor for treatment advice.

If Swallowed: Call a poison control center or doctor for treatment advice. Rinse mouth with water. Do not induce vomiting unless told to do so by the poison control center or doctor. Do not give anything by mouth to an unconscious person.

If Inhaled: Move person to fresh air. Call a poison control center or doctor for further treatment advice.

If on Skin or Clothing: Take off contaminated clothing. Rinse skin immediately with plenty of water for several minutes. Call a poison control center or doctor for treatment advice.

Most Important symptoms/effects, acute and delayed: Harmful if swallowed. May cause slight eye and skin irritation.

Indication of Immediate medical attention and special treatment if needed, if necessary: Immediate medical attention should not be required.

5. FIRE FIGHTING MEASURES

Extinguishing Media: Use extinguishing media suitable for surrounding materials. Dry chemical, carbon dioxide, foam, water spray or fog.

Special Fire Fighting Procedures: Firefighters should wear NIOSH approved self-contained breathing apparatus and full fire-fighting turn out gear. Dike area to prevent runoff and contamination of water sources. Dispose of fire control water later.

Unusual Fire and Explosion Hazards: As the solvents in this product has a low vapor pressure, the potential of fire or explosion is low. But, like all combustible organic chemical, this product (when heated and vaporized or atomized in the presence of an ignition source) may cause explosion.

Hazardous Decomposition Materials (Under Fire Conditions): Under fire conditions may produce oxides of carbon, hydrogen, nitrogen, hydrogen cyanide, and hydrochloric acid.

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions: Wear appropriate protective gear for the situation. See Personal Protection information in Section 8.

Environmental Precautions: Prevent material from entering public sewer systems or any waterways. Do not flush to drain. Large spills to soil or similar surfaces may necessitate removal of topsoil. The affected area should be removed and placed in an appropriate container for disposal.

Methods for Containment: Dike spill using absorbent or impervious materials such as earth, sand or clay. Collect and contain contaminated absorbent and dike material for disposal.

Methods for Cleanup and Disposal: Pump any free liquid into an appropriate closed container. Collect washings for disposal. No sparking tools should be used. Clean up residual material by washing area with water and detergent. Collect washing for disposal. Decontaminate tools and equipment following clean up. Decontaminate tools and equipment following cleanup. See Section 13: DISPOSAL CONSIDERATIONS for more information.

Other Information: Large spills may be reportable to the National Response Center (800-424-8802) and to state and/or local agencies.

7. HANDLING AND STORAGE

HANDLING: Avoid contact with eyes, skin or clothing. Avoid breathing mist or vapor. Wash thoroughly after handling. Keep out of reach of children and animals. Personnel handling this product should be thoroughly trained as to its hazards. Use nonsparking tools and grounded/bonded equipment and containers when transferring. Use handling, storage and disposal procedure that will prevent contamination of water, food or feed. Personal hygiene is an important work practice exposure control measure and the following general measures should be taken when working with or handling this material. Wash hands before eating, drinking, chewing gum, using tobacco or using the toilet. Remove Personal Protective Equipment (PPE) immediately after handling this product. Wash the outside of gloves before removing.

STORAGE: Do not store in or around the home. Store unused product in a cool, ventilated, dry, locked area. Do not allow prolonged storage in areas where temperatures frequently exceed 115° F (46° C). NEVER TRANSFER THIS PRODUCT TO ANOTHER CONTAINER FOR STORAGE. Do not contaminate water, food or feed by storage or disposal.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Engineering Controls:

Where engineering controls are indicated by specific use conditions or a potential for excessive exposure, use local exhaust ventilation at the point of generation.

Eye/Face Protection: Not normally required. To avoid contact with eyes, wear chemical goggles or shielded safety glasses. An emergency eyewash or water supply should be readily accessible to the work area.

Skin Protection: To avoid contact with skin, wear long pants, long-sleeved shirt, socks and shoes. An emergency shower or water supply should be readily accessible to the work area.

Respiratory Protection: Not normally required. If vapors or mists exceed acceptable levels, wear NIOSH approved air-purifying respirator with cartridges/canisters approved for use against pesticides.

General Hygiene Considerations: Personal hygiene is an important work practice exposure control measure and the following general measures should be taken when working with or handling this material: 1) do not store, use and/or consume foods, beverages, tobacco products, or cosmetics in areas where this material is stored; 2) wash hands and face carefully before eating, drinking, using tobacco, applying cosmetics or using the toilet.

Exposure Guidelines:

Component	OSHA		ACGIH		Unit
	TWA	STEL	TWA	STEL	
Acetamiprid	NE	NE	NE	NE	
Other Ingredients	NE	NE	NE	NE	

NE = Not Established

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Red liquid
Odor:	Faint odor
Odor threshold:	No data available
pH:	No data available
Melting point/freezing point:	No data available
Initial boiling point and boiling range	No data available
Flash point:	No data available
Evaporation rate:	No data available
Flammability (solid, gas):	No data available
Upper/lower flammability or explosive limits:	No data available
Vapor pressure:	No data available
Vapor density:	No data available

Relative density:	No data available
Solubility(ies):	Soluble
Partition coefficient: n-octanol/water:	No data available
Autoignition temperature:	No data available
Decomposition temperature:	No data available
Viscosity:	No data available

Note: Physical data are typical values, but may vary from sample to sample. A typical value should not be construed as a guaranteed analysis or as a specification.

10. STABILITY AND REACTIVITY

Reactivity: Not normally reactive.

Chemical Stability: This material is stable under normal handling and storage conditions.

Possibility of Hazardous Reactions: Hazardous polymerization will not occur.

Conditions to Avoid: Excessive heat. Do not store near heat or flame.

Incompatible Materials: Strong oxidizing agents: bases and acids.

Hazardous Decomposition Products: Under fire conditions may produce gases such as oxides of carbon, hydrogen, nitrogen, hydrogen cyanide, and hydrochloric acid.

11. TOXICOLOGICAL INFORMATION

Likely Routes of Exposure: Dermal, inhalation

Symptoms of Exposure:

Eye Contact: Not irritating based on toxicity studies.

Skin Contact: Not toxic and not irritating based on toxicity studies.

Ingestion: Slightly toxic if ingested based on toxicity studies.

Inhalation: Low inhalation toxicity based on toxicity studies.

Delayed, immediate and chronic effects of exposure: None expected.

Toxicological Data:

Data from laboratory studies conducted are summarized below:

Oral: Rat LD₅₀: 500 - 2,000 mg/kg

Dermal: Rat LD₅₀: >2,000 mg/kg

Inhalation: Rat 4-hr LC₅₀: >4.81 mg/L (No mortalities at highest dose tested)

Eye Irritation: Rabbit: Not irritating

Skin Irritation: Rabbit: Not irritating

Skin Sensitization: Not a contact sensitizer in guinea pigs following repeated skin exposure.

Subchronic (Target Organ) Effects: Acetamiprid does not appear to have specific target organ toxicity.

Carcinogenicity / Chronic Health Effects: No data available.

Reproductive Toxicity: There is no evidence of any teratogenic effects due to treatment with acetamiprid.

Developmental Toxicity: There are no signs of developmental toxicity were observed.

Genotoxicity: No data available.

Assessment Carcinogenicity: None listed with ACGIH, IARC, NTP or OSHA.

12. ECOLOGICAL INFORMATION

Ecotoxicity:

Data on a similar product:

96-hour LC₅₀ Rainbow Trout: > 100 mg/L

48-hour EC₅₀ Daphnia: 49.8 mg/L

72-hour EC₅₀ Green algae > 98.3 mg/L

Environmental Fate:

The active ingredient, acetamiprid, degrades rapidly by aerobic soil metabolism. Acetamiprid will not bioaccumulate in fish and in sediment.

13. DISPOSAL CONSIDERATIONS

Waste Disposal Method:

Contamination with this product will render water, food or feed unfit for human or animal consumption. Wastes resulting from the use of this product may be disposed of on site or at an approved waste disposal facility.

Nonrefillable Container. Do not reuse or refill this container. Triple rinse container promptly after emptying. **Triple rinse as follows:** Empty the remaining contents into application equipment or a mix tank and drain for 10 seconds after the flow begins to drip. Fill the container 1/4 full with water and recap. Shake for 10 seconds. Pour rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Drain for 10 seconds after the flow begins to drip. Repeat this procedure two more times. Offer for recycling, if available.

14. TRANSPORTATION INFORMATION

DOT

Not Regulated

IMDG

Not Regulated

IATA

Not Regulated

15. REGULATORY INFORMATION

EPA FIFRA INFORMATION

This chemical is a pesticide product registered by the United States Environmental Protection Agency and is subject to certain labeling requirements under federal pesticide law. These requirements differ from the classification criteria and hazard information required for safety data sheets (SDS), and for workplace labels of non-pesticide chemicals. The hazard information required on the pesticide label is reproduced below. The pesticide label also includes other important information, including directions for use.

CAUTION. Harmful if swallowed, absorbed through the skin, or inhaled. Avoid breathing vapors or spray mist. Avoid contact with skin or clothing. Wash hands thoroughly with soap and water after handling and before eating, drinking, chewing gum, or using tobacco. Keep out of reach of children and domestic animals.

U.S. FEDERAL REGULATIONS

TSCA Inventory: This product is exempted from TSCA because it is solely for FIFRA regulated use.

SARA Hazard Notification/Reporting:

Hazard Categories Under Criteria of SARA Title III Rules (40 CFR Part 370):

Acute Health

Section 313 Toxic Chemical(s):

None

Reportable Quantity (RQ) under U.S. CERCLA:

None

RCRA Waste Code:

Under RCRA, it is the responsibility of the product user to determine at the time of disposal, whether a material containing the product or derived from the product should be classified as a hazardous waste.

State Information:

Other state regulations may apply. Check individual state requirements.

California Proposition 65: Not Listed.

16. OTHER INFORMATION**National Fire Protection Association (NFPA) Hazard Rating:**

Rating for this product: Health: 2 Flammability: 1 Reactivity: 0

Hazards Scale: 0 = Minimal 1 = Slight 2 = Moderate 3 = Serious 4 = Severe

This Safety Data Sheet (SDS) serves different purposes than and DOES NOT REPLACE OR MODIFY THE EPA-ACCEPTED PRODUCT LABELING (attached to and accompanying the product container). This SDS provides important health, safety and environmental information for employers, employees, emergency responders and others handling large quantities of the product in activities generally other than product use, while the labeling provides that information specifically for product use in the ordinary course.

Use, storage and disposal of pesticide products are regulated by the EPA under the authority of the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) through the product labeling, and all necessary and appropriate precautionary, use, storage, and disposal information is set forth on that labeling. It is a violation of Federal law to use a pesticide product in any manner not prescribed on the EPA-accepted label.

Although the information and recommendations set forth herein (hereinafter "Information") are presented in good faith and believed to be correct as of the date hereof, Nufarm Americas Inc. makes no representations as to the completeness or accuracy thereof. Information is supplied upon the condition that the persons receiving same will make their own determination as to its suitability for their purposes prior to use. In no event will Nufarm Americas Inc. be responsible for damages of any nature whatsoever resulting from the use of or reliance upon Information. NO REPRESENTATIONS OR WARRANTIES, EITHER EXPRESS OR IMPLIED, OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR OF ANY OTHER NATURE ARE MADE HEREUNDER WITH RESPECT TO INFORMATION OR THE PRODUCT TO WHICH INFORMATION REFERS AND ALL SUCH WARRANTIES ARE HEREBY SPECIFICALLY DISCLAIMED.

Date of Issue: July 9, 2015

Supersedes: June 28, 2015



1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Name: 3336® F
EPA Reg. No.: 1001-69
Product Type: Fungicide

Company Name: Cleary Chemicals, LLC
 11901 S. Austin Avenue
 Alsip, IL 60803
 1-800-345-3330

Telephone Numbers: For Chemical Emergency, Spill, Leak, Fire, Exposure, or Accident,
 Call CHEMTREC Day or Night: 1-800-424-9300
 For Medical Emergencies Only, Call 1-877-325-1840

This product is an EPA FIFRA registered pesticide. Some classifications on this SDS are not exactly the same as on the FIFRA label. Certain sections are superseded by federal law governed by EPA for a registered pesticide. Please see Section 15. REGULATORY INFORMATION for explanation.

2. HAZARDS IDENTIFICATION

HEALTH HAZARDS:

Acute toxicity, oral	Category 4
Acute toxicity, inhalation	Category 4
Skin irritation	Category 2
Eye irritation	Category 2B
Specific target organ toxicity – Repeated exposure	Category 2

ENVIRONMENTAL HAZARDS:

Hazardous to aquatic environment, acute	Category 2
Hazardous to aquatic environment, chronic	Category 2

SIGNAL WORD:

WARNING

HAZARD STATEMENTS:

Harmful if swallowed or inhaled. Causes skin irritation. Causes eye irritation. May cause damage to organs (liver, kidney, and thyroid) through prolonged or repeated exposure. Toxic to aquatic life with long lasting effects.



PRECAUTIONARY STATEMENTS:

Wash hands and exposed skin thoroughly after handling. Do not eat, drink or smoke when using this product. If swallowed: Call a poison center/doctor if you feel unwell. Rinse mouth.

Avoid breathing mists/vapors/spray. Use only outdoors or in well-ventilated area. If inhaled: Remove person to fresh air and keep comfortable for breathing. Call a poison center/doctor if you feel unwell.

Wear protective gloves/eye protection/face protection. If on skin: Wash with plenty of water. If skin irritation occurs: Get medical advice/attention. Take off contaminated clothing and wash it before reuse.

If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.

Avoid release to the environment. Collect spillage.

Dispose of contents/container in accordance with local/regional/national/international regulations.

3. COMPOSITION / INFORMATION ON INGREDIENTS

COMPONENTS	CAS NO.	% BY WEIGHT
Thiophanate methyl	23564-05-8	40.0 – 42.5
Propylene glycol	57-55-6	4.75 – 5.25
Other Ingredients:	Trade Secret	Trade Secret

Synonyms: Dimethyl-4-4'-o-phenylenebis- 3-thioallophanate

Ingredients not precisely identified are proprietary or non-hazardous. Values are not product specifications.

4. FIRST AID MEASURES

If Inhaled: Move person to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably by mouth-to-mouth, if possible. Call a poison control center or doctor for further treatment advice.

If on Skin or Clothing: Take off contaminated clothing. Rinse skin immediately with plenty of water for 15 to 20 minutes. Call a poison control center or doctor for treatment advice.

If in Eyes: Hold eye open and rinse slowly and gently with water for 15 to 20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Call a poison control center or doctor for treatment advice.

If Swallowed: Call a poison control center or doctor immediately for treatment advice. Do not give any liquid to the person. Do not induce vomiting unless told to do so by the poison control center or doctor. Do not give anything by mouth to an unconscious person.

Most Important symptoms/effects, acute and delayed: Eye exposure may cause mild irritation. Skin exposure may cause slight irritation.

Indication of Immediate medical attention and special treatment if needed, if necessary: Immediate medical attention is not expected from exposure to this product.

5. FIRE FIGHTING MEASURES

Extinguishing Media: Use extinguishing media suitable for surrounding materials. Dry chemical, carbon dioxide, foam, water spray or fog.

Special Fire Fighting Procedures: Firefighters should wear NIOSH/MSHA approved self-contained breathing apparatus and full fire-fighting turn out gear. Dike area to prevent runoff and contamination of water sources. Dispose of fire control water later.

Unusual Fire and Explosion Hazards: If water is used to fight fire, contain runoff, using dikes to prevent contamination of water supplies. Dispose of fire control water later.

Hazardous Decomposition Materials (Under Fire Conditions): May produce gases such as oxides of carbon and nitrogen.

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions: Wear appropriate protective gear for the situation. See Personal Protection information in Section 8.

Environmental Precautions: Prevent material from entering public sewer systems or any waterways. Do not flush to drain. Large spills to soil or similar surfaces may necessitate removal of topsoil. The affected area should be removed and placed in an appropriate container for disposal.

Methods for Containment: Dike spill using absorbent or impervious materials such as earth, sand or clay. Collect and contain contaminated absorbent and dike material for disposal.

Methods for Clean up and Disposal: Avoid creation of dusty conditions. Scrape up and place in appropriate closed container. Wash entire spill area with a detergent slurry, absorb and sweep into

container for disposal. Decontaminate tools and equipment following cleanup. See Section 13: DISPOSAL CONSIDERATIONS for more information.

Other Information: Large spills may be reportable to the National Response Center (800-424-8802) and to state and/or local agencies.

7. HANDLING AND STORAGE

HANDLING: Avoid contact with eyes, skin, or clothing. Users should wash hands before eating, drinking, chewing gum, using tobacco or using the toilet. Remove clothing/Personal Protective Equipment (PPE) immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing. Remove Personal Protective Equipment (PPE) immediately after handling this product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.

STORAGE: Store in the original container in a dry, temperature controlled area. Do not store in a manner where cross-contamination with other pesticides, fertilizers, food or feed could occur. If spilled during storage or handling, contain/re-capture spillage and dispose of in accordance with the Pesticide Disposal instructions.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Engineering Controls:

Where engineering controls are indicated by specific use conditions or a potential for excessive exposure, use local exhaust ventilation at the point of generation.

Eye/Face Protection: Not normally required. To avoid contact with eyes, wear chemical goggles or shielded safety glasses. An emergency eyewash or water supply should be readily accessible to the work area.

Skin Protection: To avoid contact with skin, wear long pants, long-sleeved shirt, socks and shoes. An emergency shower or water supply should be readily accessible to the work area.

Respiratory Protection: Not normally required. If vapors or mists exceed acceptable levels, wear NIOSH approved air-purifying respirator with cartridges/canisters approved for use against pesticides.

General Hygiene Considerations: Personal hygiene is an important work practice exposure control measure and the following general measures should be taken when working with or handling this material: 1) do not store, use and/or consume foods, beverages, tobacco products, or cosmetics in areas where this material is stored; 2) wash hands and face carefully before eating, drinking, using tobacco, applying cosmetics or using the toilet.

Exposure Guidelines:

Component	OSHA		ACGIH		Unit
	TWA	STEL	TWA	STEL	
Propylene glycol	10 (WEEL)	NE	NE	NE	Mg/m ³

NE = Not Established WEEL = Workplace Environmental Exposure Levels

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Grayish white liquid
Odor:	Mild sulfur smell
Odor threshold:	No data available
pH:	5.8 – 6.5
Melting point/freezing point:	No data available
Initial boiling point and boiling range	No data available
Flash point:	No data available
Evaporation rate:	No data available
Flammability (solid, gas):	No data available
Upper/lower flammability or explosive limits:	No data available
Vapor pressure:	No data available
Vapor density:	No data available
Relative density:	9.71 lb active ingredient/gal

Solubility(ies):	Dispersible
Partition coefficient: n-octanol/water:	No data available
Autoignition temperature:	No data available
Decomposition temperature:	No data available
Viscosity:	1000-1200 cps depending on manufacturing batch

Note: Physical data are typical values, but may vary from sample to sample. A typical value should not be construed as a guaranteed analysis or as a specification.

10. STABILITY AND REACTIVITY

Reactivity: Not reactive
Chemical Stability: Stable
Possibility of Hazardous Reactions: N/A
Conditions to Avoid: Extreme heat
Incompatible Materials: Highly alkaline materials, oxidizing agents, lime sulfur, bordeaux mixture, copper compounds.
Hazardous Decomposition Products: Thermal decomposition generates oxides of nitrogen, sulfur, and carbon.

11. TOXICOLOGICAL INFORMATION

Likely Routes of Exposure: Dermal
Symptoms of Exposure:
Eye Contact: Mildly irritating based on toxicity studies.
Skin Contact: Minimally toxic and slightly irritating based on toxicity studies.
Ingestion: Slightly toxic if ingested based on toxicity studies.
Inhalation: Low inhalation toxicity based on toxicity studies.
Delayed, immediate and chronic effects of exposure: None reported.

Toxicological Data:
Data from laboratory studies conducted are summarized below:
Oral: Rat LD₅₀: 1,750 mg/kg (female)
Dermal: Rat LD₅₀: >5,000 mg/kg
Inhalation: Rat 4-hr LC₅₀: >2.05 mg/L
Eye Irritation: Rabbit: Mildly irritating (MMTS = 15.1 – 25.0)
Skin Irritation: Rabbit: Slightly irritating (PDMI = 0.3)
Skin Sensitization: Not a contact sensitizer in guinea pigs following repeated skin exposure.

Subchronic (Target Organ) Effects: Repeated overexposure to thiophanate methyl may cause mild anemia and affect the liver and thyroid. Overexposure to propylene glycol has been associated with kidney toxicity, liver toxicity (animals) and lactic acidosis. Very high dose acute exposure may result in CNS and cardiac effects.

Carcinogenicity / Chronic Health Effects: Prolonged overexposure to thiophanate methyl may affect the liver and thyroid. Thiophanate methyl produced dose-dependent increases in benign liver tumors in mice and thyroid tumors in rats. Overexposure to propylene glycol has been associated with kidney toxicity, liver toxicity (animals) and lactic acidosis.

Reproductive Toxicity: Thiophanate methyl did not cause reproductive toxicity in multi-generation studies in rats. In the mouse, propylene glycol was not a reproductive toxicant.

Developmental Toxicity: In a rabbit study with thiophanate methyl, slight skeletal variations and decreased fetal weights were observed at doses that were also toxic to mother animals. In a series of animal studies, propylene glycol was not a developmental toxicant.

Genotoxicity: There have been some positive and some negative studies, but the weight of evidence is that thiophanate methyl is not mutagenic. Propylene glycol was consistently nonmutagenic.

Assessment Carcinogenicity: None listed with ACGIH, IARC, NTP or OSHA.

12. ECOLOGICAL INFORMATION**Ecotoxicity:**

Data on Thiophanate Methyl Technical:

96-hour LC ₅₀ Bluegill:	>41 ppm	Bobwhite Quail 8-day Dietary LC ₅₀ :	>10,000 ppm
96-hour LC ₅₀ Rainbow Trout:	8.3 ppm	Mallard Duck Oral LD ₅₀ :	4,640 mg/kg
48-hour EC ₅₀ Daphnia:	5.4 ppm	48-hour Honey Bee Contact LD ₅₀ :	>100 µg/bee
96-hour LC ₅₀ Mysid:	1.1 ppm		

Environmental Fate: Thiophanate methyl degrades primarily to methyl 2- benzimidazole carbamate (MBC) whether on foliage, in soil or in water in a matter of days. Both photolysis and hydrolysis are important routes of degradation. MBC is microbially degraded, but stable to aqueous photodegradation, stable to hydrolysis at pH values ranging from 5 to 7 and stable to soil photolysis. Metabolism under aerobic and anaerobic conditions in both soil and water proceeds at a slow rate. Under application conditions, average half-lives are about 20 to 50 days, but may be as short as a few days with repeated use.

13. DISPOSAL CONSIDERATIONS**Waste Disposal Method:**

Wastes resulting from the use of this product may be disposed of on site or at an approved waste disposal facility. Improper disposal of excess pesticide is a violation of Federal law.

Container Handling and Disposal: Non-refillable container. Do not reuse this container to hold materials other than pesticides or dilute pesticides (rinsate). After emptying and cleaning, it may be allowable to temporarily hold rinsate or other pesticide-related materials in the container. Contact your state regulatory agency to determine allowable practices in your state. Offer for recycling, if available. Triple rinse or pressure rinse container (or equivalent) promptly after emptying.

Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank and drain for 10 seconds after the flow begins to drip. Fill the container ¼ full with water and recap. Shake for 10 seconds. Pour rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Drain for 10 seconds after the flow begins to drip. Repeat this procedure two more times.

Pressure rinse as follows: Empty the remaining contents into application equipment or a mix tank and continue to drain for 10 seconds after the flow begins to drip. Hold container upside down over application equipment or mix tank or collect rinsate for later use or disposal. Insert pressure rinsing nozzle in the side of the container and rinse at about 40 PSI for at least 30 seconds. Drain for 10 seconds after the flow begins to drip.

14. TRANSPORTATION INFORMATION**DOT****< 2 gallons per completed package**

Non Regulated

≥ 2 gallons but < 119 gallons per completed package

UN 3082, Environmentally hazardous substances, liquid, n.o.s., 9, III, (thiophanate-methyl), RQ

≥ 119 gallons per completed package

UN 3082, Environmentally hazardous substances, liquid, n.o.s., 9, III, (thiophanate-methyl), Marine Pollutant, RQ

IMDG

UN 3082, Environmentally hazardous substances, liquid, n.o.s., 9, III, (thiophanate-methyl), Marine Pollutant

IATA

Non Regulated

15. REGULATORY INFORMATION**EPA FIFRA INFORMATION**

This chemical is a pesticide product registered by the United States Environmental Protection Agency and is subject to certain labeling requirements under federal pesticide law. These requirements differ from the classification criteria and hazard information required for safety data sheets (SDS), and for workplace labels of non-pesticide chemicals. The hazard information required on the pesticide label is reproduced below. The pesticide label also includes other important information, including directions for use.

CAUTION. Harmful if absorbed through skin. Harmful if inhaled. Avoid contact with eyes, skin, or clothing. Avoid breathing spray mist.

U.S. FEDERAL REGULATIONS

TSCA Inventory: This product is exempted from TSCA because it is solely for FIFRA regulated use.

SARA Hazard Notification/Reporting:

Hazard Categories Under Criteria of SARA Title III Rules (40 CFR Part 370):

Immediate and Delayed

Section 313 Toxic Chemical(s):

Thiophanate-methyl (CAS No. 23564-05-8) 40 – 42.5% equivalent by weight in product

Reportable Quantity (RQ) under U.S. CERCLA:

Thiophanate-methyl (CAS No. 23564-05-8) 10 pounds

RCRA Waste Code:

Under RCRA, it is the responsibility of the product user to determine at the time of disposal, whether a material containing the product or derived from the product should be classified as a hazardous waste.

State Information:

Other state regulations may apply. Check individual state requirements.

California Proposition 65: Thiophanate-methyl is known to the state of California to cause developmental effects in males and females.

16. OTHER INFORMATION**National Fire Protection Association (NFPA) Hazard Rating:**

Rating for this product: Health: 0 Flammability: 0 Reactivity: 1

Hazards Scale: 0 = Minimal 1 = Slight 2 = Moderate 3 = Serious 4 = Severe

This Safety Data Sheet (SDS) serves different purposes than and DOES NOT REPLACE OR MODIFY THE EPA-ACCEPTED PRODUCT LABELING (attached to and accompanying the product container). This SDS provides important health, safety and environmental information for employers, employees, emergency responders and others handling large quantities of the product in activities generally other than product use, while the labeling provides that information specifically for product use in the ordinary course.

Use, storage and disposal of pesticide products are regulated by the EPA under the authority of the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) through the product labeling, and all necessary and appropriate precautionary, use, storage, and disposal information is set forth on that labeling. It is a violation of Federal law to use a pesticide product in any manner not prescribed on the EPA-accepted label.

SAFETY DATA SHEET

3336® F

Although the information and recommendations set forth herein (hereinafter "Information") are presented in good faith and believed to be correct as of the date hereof, Nufarm Americas Inc. makes no representations as to the completeness or accuracy thereof. Information is supplied upon the condition that the persons receiving same will make their own determination as to its suitability for their purposes prior to use. In no event will Nufarm Americas Inc. be responsible for damages of any nature whatsoever resulting from the use of or reliance upon Information. NO REPRESENTATIONS OR WARRANTIES, EITHER EXPRESS OR IMPLIED, OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR OF ANY OTHER NATURE ARE MADE HEREUNDER WITH RESPECT TO INFORMATION OR THE PRODUCT TO WHICH INFORMATION REFERS AND ALL SUCH WARRANTIES ARE HEREBY SPECIFICALLY DISCLAIMED.

Date of Issue: April 8, 2015

Supersedes: May 28, 2013





1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Name: 3336 WP
EPA Reg. No.: 1001-63
Product Type: Fungicide

Company Name: Cleary Chemicals, LLC
 11901 S. Austin Avenue
 Alsip, IL 60803
 1-800-345-3330

Telephone Numbers: For Chemical Emergency, Spill, Leak, Fire, Exposure, or Accident,
 Call CHEMTREC Day or Night: 1-800-424-9300
 For Medical Emergencies Only, Call 1-877-325-1840

This product is an EPA FIFRA registered pesticide. Some classifications on this SDS are not exactly the same as on the FIFRA label. Certain sections are superseded by federal law governed by EPA for a registered pesticide. Please see Section 15. REGULATORY INFORMATION for explanation.

2. HAZARDS IDENTIFICATION

HEALTH HAZARDS:

Acute toxicity, inhalation	Category 4
Skin irritation	Category 2
Eye irritation	Category 2A
Specific target organ toxicity – Repeated exposure	Category 2

ENVIRONMENTAL HAZARDS:

Hazardous to aquatic environment, acute	Category 2
Hazardous to aquatic environment, chronic	Category 2

SIGNAL WORD:

WARNING

HAZARD STATEMENTS:

Harmful if inhaled. Causes skin irritation. Causes eye irritation. May cause damage to organs (liver and thyroid) through prolonged or repeated exposure. Toxic to aquatic life with long lasting effects.



PRECAUTIONARY STATEMENTS:

Do not breathe dust/mist/spray. Use only outdoors or in well-ventilated area. Wear protective gloves/eye protection/face protection.

IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a poison center/doctor if you feel unwell.

IF ON SKIN: Wash with plenty of water. If skin irritation occurs: Get medical advice/attention. Take off contaminated clothing and wash it before reuse.

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.

Get medical advice/attention if you feel unwell.

Avoid release to the environment. Collect spillage.

Dispose of contents/container in accordance with local/regional/national/international regulations.

3. COMPOSITION / INFORMATION ON INGREDIENTS

COMPONENTS	CAS NO.	% BY WEIGHT
Thiophanate-methyl	23564-05-8	48.5 – 51.5
Kaolin	1332-58-7	41 – 43.6
Crystalline silica (quartz)	14808-60-7	< 0.5
Titanium dioxide	13463-67-7	< 1.0
Hydrated, amorphous silica	112926-00-8	< 1.0
Other Ingredients	Trade Secret	Trade Secret

Synonyms: Dimethyl-4-4'-o-phenylenebis- 3-thioallophanate

Ingredients not precisely identified are proprietary or non-hazardous. Values are not product specifications.

4. FIRST AID MEASURES

If in Eyes: Hold eye open and rinse slowly and gently with water for 15 to 20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Call a poison control center or doctor for treatment advice.

If Inhaled: Move person to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably by mouth-to-mouth, if possible. Call a poison control center or doctor for further treatment advice.

If on Skin or Clothing: Take off contaminated clothing. Rinse skin immediately with plenty of water for 15 to 20 minutes. Call a poison control center or doctor for treatment advice.

If Swallowed: Call a poison control center or doctor immediately for treatment advice. Do not give any liquid to the person. Do not induce vomiting unless told to do so by the poison control center or doctor. Do not give anything by mouth to an unconscious person.

Most important symptoms/effects, acute and delayed: Eye exposure may cause mild irritation. Skin exposure may cause slight irritation.

Indication of immediate medical attention and special treatment if needed, if necessary: None expected.

5. FIRE FIGHTING MEASURES

Extinguishing Media: Use extinguishing media suitable for surrounding materials. Dry chemical, carbon dioxide, foam, water spray or fog.

Special Fire Fighting Procedures: Firefighters should wear NIOSH/MSHA approved self-contained breathing apparatus and full fire-fighting turn out gear. Dike area to prevent runoff and contamination of water sources. Dispose of fire control water later.

Unusual Fire and Explosion Hazards: If water is used to fight fire, contain runoff, using dikes to prevent contamination of water supplies. Dispose of fire control water later.

Hazardous Decomposition Materials (Under Fire Conditions): May produce gases such as oxides of carbon and nitrogen.

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions: Wear appropriate protective gear for the situation. See Personal Protection information in Section 8.

Environmental Precautions: Prevent material from entering public sewer systems or any waterways. Do not flush to drain. Large spills to soil or similar surfaces may necessitate removal of topsoil. The affected area should be removed and placed in an appropriate container for disposal.

Methods for Containment: Dike spill using absorbent or impervious materials such as earth, sand or clay. Collect and contain contaminated absorbent and dike material for disposal.

Methods for Cleanup and Disposal: Avoid creation of dusty conditions. Scrape up and place in appropriate closed container. Wash entire spill area with a detergent slurry, absorb and sweep into container for disposal. Decontaminate tools and equipment following cleanup. See Section 13: DISPOSAL CONSIDERATIONS for more information.

Other Information: Large spills may be reportable to the National Response Center (800-424-8802) and to state and/or local agencies.

7. HANDLING AND STORAGE

HANDLING: Avoid contact with eyes or clothing. Users should wash hands before eating, drinking, chewing gum, using tobacco or using the toilet. Remove clothing/Personal Protective Equipment (PPE) immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing. Remove Personal Protective Equipment (PPE) immediately after handling this product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.

STORAGE: Store in the original container in a dry, temperature controlled area. Do not store in a manner where cross-contamination with other pesticides, fertilizers, food or feed could occur. If spilled during storage or handling, contain/re-capture spillage and dispose of in accordance with the Pesticide Disposal Instructions.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Engineering Controls:

Where engineering controls are indicated by specific use conditions or a potential for excessive exposure, use local exhaust ventilation at the point of generation.

Eye/Face Protection: Not normally required. To avoid contact with eyes, wear chemical goggles or shielded safety glasses. An emergency eyewash or water supply should be readily accessible to the work area.

Skin Protection: To avoid contact with skin, wear long pants, long-sleeved shirt, socks and shoes. An emergency shower or water supply should be readily accessible to the work area.

Respiratory Protection: Not normally required. If vapors or mists exceed acceptable levels, wear NIOSH approved air-purifying respirator with cartridges/canisters approved for use against pesticides.

General Hygiene Considerations: Personal hygiene is an important work practice exposure control measure and the following general measures should be taken when working with or handling this material: 1) do not store, use and/or consume foods, beverages, tobacco products, or cosmetics in areas where this material is stored; 2) wash hands and face carefully before eating, drinking, using tobacco, applying cosmetics or using the toilet.

Exposure Guidelines:

Component	OSHA		ACGIH		Unit
	TWA	STEL	TWA	STEL	
Thiophanate-methyl	NE	NE	NE	NE	
Kaolin	5(R)* 15(T)	NE	2(R) 2(T)	NE	mg/m ³
Crystalline silica (quartz)	10 mg/m ³ /%SiO ₂ +2 (R)	NE	0.025 (R)	NE	mg/m ³
Titanium dioxide	15	NE	10	NE	mg/m ³
Hydrated, amorphous silica	80 mg/m ³ /%SiO ₂	NE	NE	NE	mg/m ³
Other Ingredients	NE	NE	NE	NE	

NE = Not Established

* Based on PNOR (Particulates Not Otherwise Regulated)

R= Respirable Fraction

T= Total Dust

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Greyish white colored powder
Odor:	Mild sulfur smell
Odor threshold:	No data available
pH:	6-7
Melting point/freezing point:	No data available
Initial boiling point and boiling range	No data available
Flash point:	No data available
Evaporation rate:	No data available
Flammability (solid, gas):	No data available
Upper/lower flammability or explosive limits:	No data available
Vapor pressure:	No data available
Vapor density:	No data available
Relative density:	16-19 lb/ft ³ depending on manufacturing batch
Solubility(ies):	Dispersible
Partition coefficient: n-octanol/water:	No data available
Autoignition temperature:	No data available
Decomposition temperature:	No data available
Viscosity:	No data available

Note: Physical data are typical values, but may vary from sample to sample. A typical value should not be construed as a guaranteed analysis or as a specification.

10. STABILITY AND REACTIVITY

Reactivity: Not reactive
Chemical Stability: This material is stable under normal handling and storage conditions.
Possibility of Hazardous Reactions: Hazardous polymerization will not occur.
Conditions to Avoid: Excessive heat. Do not store near heat or flame.
Incompatible Materials: Strong oxidizing agents: bases and acids.
Hazardous Decomposition Products: Under fire conditions may produce oxides of carbon, nitrogen and sulfur.

11. TOXICOLOGICAL INFORMATION

Likely Routes of Exposure: Dermal, inhalation
Symptoms of Exposure:
Eye Contact: Mildly irritating based on toxicity studies.
Skin Contact: Minimally toxic and slightly irritating based on toxicity studies.
Ingestion: Slightly toxic if ingested based on toxicity studies.
Inhalation: Low inhalation toxicity based on toxicity studies.
Delayed, immediate and chronic effects of exposure: None reported.
Toxicological Data:
Data from laboratory studies conducted are summarized below:
Oral: Rat LD₅₀: > 5,000 mg/kg (female)
Dermal: Rat LD₅₀: >5,000 mg/kg
Inhalation: Rat 4-hr LC₅₀: <2.04 mg/L
Eye Irritation: Rabbit: Mildly irritating (MMTS=10.0)
Skin Irritation: Rabbit: Slightly irritating (PDII = 0.3)
Skin Sensitization: Not a contact sensitizer in guinea pigs following repeated skin exposure.
Subchronic (Target Organ) Effects: Repeated overexposure to thiophanate methyl may cause mild anemia and affect the liver and thyroid.
Carcinogenicity / Chronic Health Effects: Prolonged overexposure to thiophanate methyl may affect the liver and thyroid. Thiophanate methyl produced dose-dependent increases in benign liver tumors in mice and thyroid tumors in rats. This product contains clay. Crystalline silica (e.g. quartz) is a naturally

occurring component of clay. Inhalation of crystalline silica may cause pulmonary fibrosis (silicosis). Crystalline silica has been classified by IARC as carcinogenic to humans (Group 1), by the U.S. National Toxicology Program as a known human carcinogen and by ACGIH as a suspected human carcinogen (A2).

Reproductive Toxicity: Thiophanate methyl did not cause reproductive toxicity in multi-generation studies in rats.

Developmental Toxicity: In a rabbit study with thiophanate methyl, slight skeletal variations and decreased fetal weights were observed at doses that were also toxic to mother animals.

Genotoxicity: There have been some positive and some negative studies, but the weight of evidence is that thiophanate methyl is not mutagenic.

Assessment of Carcinogenicity:

This product contains substances that are considered to be probable or suspected human carcinogens as follows:

Component	Regulatory Agency Listing As Carcinogen			
	ACGIH	IARC	NTP	OSHA
Thiophanate-methyl	No	No	No	No
Kaolin	No	No	No	No
Crystalline silica (quartz)	A2	1	Yes	No
Titanium dioxide	No	2B	No	No
Hydrated, amorphous silica	No	No	No	No
Other Ingredients	No	No	No	No

12. ECOLOGICAL INFORMATION

Ecotoxicity:

Data on Thiophanate-methyl Technical:

96-hour LC ₅₀ Bluegill:	>41 ppm	Bobwhite Quail 8-day Dietary LC ₅₀ :	>10,000 ppm
96-hour LC ₅₀ Rainbow Trout:	8.3 ppm	Mallard Duck Oral LD ₅₀ :	4,640 mg/kg
48-hour EC ₅₀ Daphnia:	5.4 ppm	48-hour Honey Bee Contact LD ₅₀ :	>100 µg/bee
96-hour LC ₅₀ Mysid:	1.1 ppm		

Environmental Fate:

Thiophanate methyl degrades primarily to MBC whether on foliage, in soil or in water in a matter of days. Both photolysis and hydrolysis are important routes of degradation. MBC is microbially degraded, but stable to aqueous photodegradation, stable to hydrolysis at pH values ranging from 5 to 7 and stable to soil photolysis. Metabolism under aerobic and anaerobic conditions in both soil and water proceeds at a slow rate. Under application conditions, average half-lives are about 20 to 50 days, but may be as short as a few days with repeated use.

13. DISPOSAL CONSIDERATIONS

Waste Disposal Method:

Wastes resulting from the use of this product may be disposed of on site or at an approved waste disposal facility. Improper disposal of excess pesticide is a violation of Federal law.

Container Handling and Disposal: Nonrefillable container. Do not reuse or refill this container. Securely wrap original container in several layers of newspaper and discard in trash. Offer for recycling, if available. When all water soluble bags are used, dispose of empty foil package in a sanitary landfill, or by incineration, or, if allowed by State and local authorities, by burning. If burned, stay out of smoke.

Home Use Disposal: If empty: Nonrefillable container. Do not reuse or refill this container. Offer for recycling, if available. If partly filled: Call your local solid waste agency or 1-800-CLEANUP for disposal instructions. Never place unused product down any indoor or outdoor drain.

14. TRANSPORTATION INFORMATION

DOT

< 20 pounds per completed package

Non Regulated

≥ 20 pounds to 882 pounds per completed package

UN 3077, Environmentally hazardous substances, solid, n.o.s., 9, III, (thiophanate-methyl), RQ

>882 pounds per completed package

UN 3077, Environmentally hazardous substances, solid, n.o.s., 9, III, (thiophanate-methyl), RQ, Marine Pollutant

IMO / IMDG

UN 3077, Environmentally hazardous substances, solid, n.o.s., 9, III, (thiophanate-methyl), Marine Pollutant

IATA

Non-regulated

15. REGULATORY INFORMATION

EPA FIFRA INFORMATION

This chemical is a pesticide product registered by the United States Environmental Protection Agency and is subject to certain labeling requirements under federal pesticide law. These requirements differ from the classification criteria and hazard information required for safety data sheets (SDS), and for workplace labels of non-pesticide chemicals. The hazard information required on the pesticide label is reproduced below. The pesticide label also includes other important information, including directions for use.

CAUTION. Causes moderate eye irritation. Avoid contact eyes or clothing.

U.S. FEDERAL REGULATIONS

TSCA Inventory: This product is exempted from TSCA because it is solely for FIFRA regulated use.

SARA Hazard Notification/Reporting:

Hazard Categories Under Criteria of SARA Title III Rules (40 CFR Part 370):

Immediate and Delayed

Section 313 Toxic Chemical(s):

Thiophanate-methyl (CAS No. 23564-05-8) 48.5 – 51.5% equivalent by weight in product

Reportable Quantity (RQ) under U.S. CERCLA:

Thiophanate-methyl (CAS No. 23564-05-8) 10 pounds

RCRA Waste Code:

Under RCRA, it is the responsibility of the product user to determine at the time of disposal, whether a material containing the product or derived from the product should be classified as a hazardous waste.

State Information:

Other state regulations may apply. Check individual state requirements.

California Proposition 65: This product contains chemicals known to the state of California to cause cancer and developmental effects in males and females.

16. OTHER INFORMATION

National Fire Protection Association (NFPA) Hazard Rating:

Rating for this product: Health: 0 Flammability: 0 Reactivity: 1

Hazards Scale: 0 = Minimal 1 = Slight 2 = Moderate 3 = Serious 4 = Severe

This Safety Data Sheet (SDS) serves different purposes than and DOES NOT REPLACE OR MODIFY THE EPA-ACCEPTED PRODUCT LABELING (attached to and accompanying the product container). This SDS provides important health, safety and environmental information for employers, employees, emergency responders and others handling large quantities of the product in activities generally other than product use, while the labeling provides that information specifically for product use in the ordinary course.

Use, storage and disposal of pesticide products are regulated by the EPA under the authority of the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) through the product labeling, and all necessary and appropriate precautionary, use, storage, and disposal information is set forth on that labeling. It is a violation of Federal law to use a pesticide product in any manner not prescribed on the EPA-accepted label.

Although the information and recommendations set forth herein (hereinafter "Information") are presented in good faith and believed to be correct as of the date hereof, Nufarm Americas Inc. makes no representations as to the completeness or accuracy thereof. Information is supplied upon the condition that the persons receiving same will make their own determination as to its suitability for their purposes prior to use. In no event will Nufarm Americas Inc. be responsible for damages of any nature whatsoever resulting from the use of or reliance upon Information. NO REPRESENTATIONS OR WARRANTIES, EITHER EXPRESS OR IMPLIED, OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR OF ANY OTHER NATURE ARE MADE HEREUNDER WITH RESPECT TO INFORMATION OR THE PRODUCT TO WHICH INFORMATION REFERS AND ALL SUCH WARRANTIES ARE HEREBY SPECIFICALLY DISCLAIMED.

Date of Issue: June 11, 2015

Supersedes: April 8, 2015



SAFETY DATA SHEET

Issuing Date 5/01/2015



The supplier identified below generated this SDS using the UL SDS template. UL did not test, certify, or approve the substance described in this SDS, and all information in this SDS was provided by the supplier or was reproduced from publically available regulatory data sources. UL makes no representations or warranties regarding the completeness or accuracy of the information in this SDS and disclaims all liability in connection with the use of this information or the substance described in this SDS. The layout, appearance and format of this SDS is © 2014 UL LLC. All rights reserved.

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

Product identifier DF25CT

Product Name Deer Off Concentrate

Other means of identification

Synonyms None

Size 2.5 Gal

Recommended use of the chemical and restrictions on use

Recommended Use Repellant, Pest, Non-Aerosol

Uses advised against It is a violation of Federal law to use this product in a manner inconsistent with its labeling.

Details of the supplier of the safety data sheet

Supplier Name Woodstream Corporation
Supplier Address 69 North Locust St.
Lititz
PA
17543
US

Supplier Phone Number Phone:(717) 626-2125
Fax:(717) 626-1912
Contact Phone(717) 626-2125

Regulatory Licenses EPA Reg. No. 67356-1

2. HAZARDS IDENTIFICATION

Classification

This chemical is not considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

GHS Label elements, including precautionary statements

Emergency Overview



The product contains no substances which at their given concentration, are considered to be hazardous to health

Appearance Orange

Physical State Liquid

Odor Slight

Precautionary Statements - Prevention

Obtain special instructions before use

Precautionary Statements - Response

None

Precautionary Statements - Storage

None

Precautionary Statements - Disposal

None

Hazards not otherwise classified (HNOC)

Not applicable

Unknown Toxicity

75.005% of the mixture consists of ingredient(s) of unknown toxicity

Other information

May cause slight eye irritation

Interactions with Other Chemicals

No information available.

3. COMPOSITION/INFORMATION ON INGREDIENTS

. The product contains no substances which at their given concentration, are considered to be hazardous to health.

4. FIRST AID MEASURES

First aid measures

Eye Contact

Rinse thoroughly with plenty of water, also under the eyelids. If symptoms persist, call a physician.

Skin Contact

Wash skin with soap and water. In the case of skin irritation or allergic reactions see a physician.

Inhalation

Remove to fresh air. If symptoms persist, call a physician.

Ingestion

Do NOT induce vomiting. Drink plenty of water. If symptoms persist, call a physician.

Most important symptoms and effects, both acute and delayed



Most Important Symptoms and Effects No information available.

Indication of any immediate medical attention and special treatment needed

Notes to Physician Treat symptomatically.

5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable extinguishing media

CAUTION: Use of water spray when fighting fire may be inefficient.

Specific Hazards Arising from the Chemical

No information available.

Hazardous Combustion Products

Carbon oxides.

Explosion Data

Sensitivity to Mechanical Impact No.

Sensitivity to Static Discharge No.

Protective equipment and precautions for firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal Precautions Avoid contact with eyes.

Environmental Precautions

Environmental Precautions Refer to protective measures listed in Sections 7 and 8.

Methods and material for containment and cleaning up

Methods for Containment Prevent further leakage or spillage if safe to do so.

Methods for cleaning up Soak up with inert absorbent material. Pick up and transfer to properly labeled containers.



7. HANDLING AND STORAGE

STORAGE AND DISPOSAL: Do not contaminate water, food or feed by storage or disposal.

STORAGE: Store only in original container, in a cool, dry area. Keep away from children and pets. Protect from heat and freezing. Store between 40° F and 90° F. Keep container tightly closed to prevent spillage and evaporation. If spillage occurs, dilute with water and flush away.

DISPOSAL: If empty: NONREFILLABLE CONTAINER. DO NOT REFILL OR REUSE THIS CONTAINER. Place in trash or offer for recycling if available. If partly filled: Call your local solid waste agency for disposal instructions. Never place unused product down any indoor or outdoor drain.

Incompatible Products None known.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Exposure Guidelines This product, as supplied, does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies

Appropriate engineering controls

Engineering Measures Showers
 Eyewash stations
 Ventilation systems

Individual protection measures, such as personal protective equipment

Eye/Face Protection No special protective equipment required.

Skin and Body Protection No special protective equipment required.

Respiratory Protection No protective equipment is needed under normal use conditions. If exposure limits are exceeded or irritation is experienced, ventilation and evacuation may be required.

Hygiene Measures Handle in accordance with good industrial hygiene and safety practice.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical and Chemical Properties

<p>Physical State Liquid Appearance Orange Color No information available</p>	<p>Odor Slight Odor Threshold No information available</p>
<p><u>Property</u> <u>Values</u></p> <p>pH 5.7 Melting / freezing point No data available Boiling point / boiling range No data available Flash Point No data available Evaporation Rate No data available Flammability (solid, gas) No data available Flammability Limit in Air Upper flammability limit No data available</p>	<p><u>Remarks/ Method</u></p> <p>None known None known None known None known None known None known</p>



Lower flammability limit	No data available	
Vapor pressure	No data available	None known
Vapor density	No data available	None known
Specific Gravity	No data available	None known
Water Solubility	Very slight	None known
Solubility in other solvents	No data available	None known
Partition coefficient: n-octanol/water	No data available	None known
Autoignition temperature	No data available	None known
Decomposition temperature	No data available	None known
Kinematic viscosity	No data available	None known
Dynamic viscosity	No data available	None known
Explosive properties	No data available	
Oxidizing Properties	No data available	

Other Information

Softening Point	No data available
VOC Content (%)	No data available
Particle Size	No data available
Particle Size Distribution	

10. STABILITY AND REACTIVITY

Reactivity

No data available.

Chemical stability

Stable under recommended storage conditions.

Possibility of Hazardous Reactions

None under normal processing.

Hazardous Polymerization

Hazardous polymerization does not occur.

Conditions to avoid

None known.

Incompatible materials

None known.

Hazardous Decomposition Products

Carbon oxides.

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Product Information	Product does not present an acute toxicity hazard based on known or supplied information.
Inhalation	Specific test data for the substance or mixture is not available.
Eye Contact	Specific test data for the substance or mixture is not available.
Skin Contact	Specific test data for the substance or mixture is not available.



Ingestion

Specific test data for the substance or mixture is not available.

Component Information

Information on toxicological effects

Symptoms

No information available.

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Sensitization

No information available.

Mutagenic Effects

No information available.

Carcinogenicity

Contains no ingredient listed as a carcinogen.

Reproductive Toxicity

No information available.

STOT - single exposure

No information available.

STOT - repeated exposure

No information available.

Chronic Toxicity

No known effect based on information supplied.

Target Organ Effects

None known.

Aspiration Hazard

No information available.

Numerical measures of toxicity Product Information

The following values are calculated based on chapter 3.1 of the GHS document
Not applicable

12. ECOLOGICAL INFORMATION

Ecotoxicity

The environmental impact of this product has not been fully investigated.

Persistence and Degradability

No information available.

Bioaccumulation

No information available

Other adverse effects

No information available.



13. DISPOSAL CONSIDERATIONS

Waste treatment methods

Disposal methods This material, as supplied, is not a hazardous waste according to Federal regulations (40 CFR 261). This material could become a hazardous waste if it is mixed with or otherwise comes in contact with a hazardous waste, if chemical additions are made to this material, or if the material is processed or otherwise altered. Consult 40 CFR 261 to determine whether the altered material is a hazardous waste. Consult the appropriate state, regional, or local regulations for additional requirements.

Contaminated Packaging Dispose of contents/containers in accordance with local regulations.

California Hazardous Waste Codes 232

14. TRANSPORT INFORMATION

DOT NOT REGULATED
 Proper Shipping Name NON REGULATED
 Hazard Class N/A

TDG Not regulated

MEX Not regulated

ICAO Not regulated

IATA Not regulated
 Proper Shipping Name NON REGULATED
 Hazard Class N/A

IMDG/IMO Not regulated
 Hazard Class N/A

RID Not regulated

ADR Not regulated

ADN Not regulated

15. REGULATORY INFORMATION

International Inventories

TSCA Complies
 DSL All components are listed either on the DSL or NDSL.

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
 DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List

US Federal Regulations



SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372

SARA 311/312 Hazard Categories

Acute Health Hazard	No
Chronic Health Hazard	No
Fire Hazard	No
Sudden release of pressure hazard	No
Reactive Hazard	No

CWA (Clean Water Act)

This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42)

CERCLA

This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material

US State Regulations

California Proposition 65

This product does not contain any Proposition 65 chemicals.

This chemical is a pesticide product registered by the Environmental Protection Agency and is subject to certain labeling requirements under federal pesticide law. These requirements differ from the classification criteria and hazard information required for safety data sheets and for workplace labels of non-pesticide chemicals. The hazard information required on the pesticide label is reproduced below. The pesticide label also includes other important information, including directions for use.

Pesticide Label Signal Word: Caution

Causes moderate eye irritation. Avoid contact with eyes, skin or clothing. In case of contact, wash thoroughly with soap and water after handling.

ENVIRONMENTAL HAZARDS: Do not apply directly to water or to areas where surface water is present, or to intertidal areas below the mean high water mark. Keep out of lakes, streams and ponds. Do not contaminate water by equipment cleaning or waste disposal.

16. OTHER INFORMATION

NFPA	Health Hazards 1	Flammability 0	Instability 0	Physical and Chemical Hazards - Personal Protection X
HMIS	Health Hazards 1	Flammability 0	Physical Hazard 0	

Prepared By	Product Stewardship 23 British American Blvd. Latham, NY 12110 1-800-572-6501
Revision Date	09-Apr-2014
Revision Note	No information available

Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text



End of Safety Data Sheet





1. Identification

Product identifier	DURHAM® METALDEHYDE GRANULES 7.5
Other means of identification	
SDS number	138
Synonym(s)	TRAILS END® 7.5 * Durham® Ornamental 7.5 * Metro (Tested) That's It® Dry
Recommended use	Molluscicide
Recommended restrictions	None known.
Product registration number	
EPA	5481-584 5481-584-8278 5481-103

Manufacturer/Importer/Supplier/Distributor information

Manufacturer

Company name	AMVAC Chemical Corporation	
Address	4100 E Washington Blvd Los Angeles, CA 90023 USA	
Telephone	AMVAC Chemical Corp	323-264-3910
	AMVAC Chemical Corp	323-268-1028 (FAX)
Website	www.Amvac-Chemical.com	
E-mail	CustServ@Amvac-Chemical.com	
Emergency phone number	Medical	888-681-4261
	CHEMTREC® (USA+Canada)	800-424-9300
	Product Use	888-462-6822
	CHEMTREC® (Outside USA)	+1-703-527-3887

2. Hazard(s) identification

Physical hazards	Not classified.	
Health hazards	Acute toxicity, inhalation	Category 2
	Reproductive toxicity	Category 2
Environmental hazards	Not classified.	
OSHA defined hazards	Not classified.	

Label elements



Signal word	Warning
Hazard statement	Causes moderate eye irritation. Harmful if swallowed, in contact with skin or if inhaled.
Precautionary statement	
Prevention	Observe good industrial hygiene practices.
Response	Wash hands after handling.
Storage	Store away from incompatible materials.
Disposal	Dispose of contents/container in accordance with all applicable local/regional/national/international regulations.
Hazard(s) not otherwise classified (HNOC)	None known.

Supplemental information

United States Environmental Protection Agency Labeling Requirements: This chemical is a pesticide product registered by the United States Environmental Protection Agency and is subject to certain labeling requirements under federal pesticide law. These requirements differ from the classification criteria and hazard information required for safety data sheets (SDS), and for workplace labels of non-pesticide chemicals. The hazard information required on the pesticide label is reproduced below. The pesticide label also includes other important information, including directions for use.

HAZARDS TO HUMANS AND DOMESTIC ANIMALS.

CAUTION. Harmful by inhalation, in contact with skin and if swallowed. Causes moderate eye irritation. Avoid contact with eyes, skin, and clothing. Avoid breathing dust.

IMPORTANT: This product can be harmful to children and fatal to domestic animals when ingested. Children and dogs may be attracted to the product. Application of this product is prohibited unless children and domestic animals can be excluded from the treated area from the start of the application until applied material is no longer visible.

ENVIRONMENTAL HAZARDS

This pesticide is toxic to mollusks (e.g., clams, oysters, scallops, mussels). Do not apply directly to water, to areas where surface water is present, or to intertidal areas below the mean high water mark. Runoff may be hazardous to aquatic organisms in water adjacent to treated areas. Do not contaminate water when disposing of equipment wash waters or rinsate. This pesticide is toxic to birds and mammals. Granules on soil surface may be hazardous to terrestrial wildlife. Cover or collect any such materials spilled during loading.

3. Composition/information on ingredients

Mixtures

Chemical name	Common name and synonyms	CAS number	%
Metaldehyde		108-62-3	7.5
Other ingredients		NA	92.5
(includes trace of Crystalline silica, quartz)		14808-60-7	< 0.1

4. First-aid measures

Inhalation

Remove victim to fresh air and keep at rest in a position comfortable for breathing. Oxygen or artificial respiration if needed. Do not use mouth-to-mouth method if victim inhaled the substance. Induce artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Call a physician or poison control center immediately.

Skin contact

Remove contaminated clothing. Rinse skin with water/shower. Call a POISON CENTER or doctor/physician if you feel unwell. For minor skin contact, avoid spreading material on unaffected skin. Wash clothing separately before reuse.

Eye contact

Do not rub eyes. Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention immediately.

Ingestion

Call a physician or poison control center immediately. Rinse mouth thoroughly. Drink 1 or 2 glasses of water. Never give anything by mouth to a victim who is unconscious or is having convulsions. Do not induce vomiting without advice from poison control center. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs. Do not use mouth-to-mouth method if victim ingested the substance. Induce artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device.

Most important symptoms/effects, acute and delayed

Based on animal toxicity information for metaldehyde, it is anticipated that this material would be harmful upon ingestion and that direct contact may elicit mild eye and skin irritation. Overexposure to metaldehyde may cause excessive salivation, vomiting, nausea, acetoneuria (odor of acetone on breath), convulsions, increased body temperature, depression of medullary respiratory and vasomotor control centers. Coma. May be fatal. [Note: Because of the low amounts of metaldehyde in the product, it is unlikely the victim can be exposed to sufficient quantities of metaldehyde to have coma or death induced]. Overexposure may aggravate preexisting conditions associated with the kidney, liver, and brain.

Indication of immediate medical attention and special treatment needed

Metaldehyde is a systemic toxin. There is no antidote. According to Hazardous Substance Database (HSDB), gastric lavage should be considered if potentially life-threatening levels of Metaldehyde have been ingested, if the procedure can be performed within one hour of ingestion. Administration of Diazepam or Clonidine 20 minutes after ingestion of 1000 mg/kg of Metaldehyde by mice delayed the onset of symptoms and reduced mortality. This is equivalent to 0.6 lb of product ingested for a 10 kg child. Therefore, Diazepam and Clonidine may be appropriate antidotes to reduce the symptomatology of Metaldehyde ingestion. For acute inhalation overexposure, the patient should be monitored as respiratory failure may occur 24 to 48 hours after exposure. Contact your local or state Poison Control Center for more information. Dust inhalation is usual route of accidental exposure; the product is rarely ingested. Treatment is symptomatic and supportive. Monitor severe exposures closely: seizures, electrolyte imbalances, acidosis, dehydration, and increased body temperature have been reported.

General information

Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Take off contaminated clothing and shoes immediately. Show this safety data sheet to the doctor in attendance. In case of shortness of breath, give oxygen. Keep victim warm. Wash contaminated clothing before reuse.

5. Fire-fighting measures

Suitable extinguishing media

Water fog. Foam. Dry chemical powder. Carbon dioxide (CO2).

Unsuitable extinguishing media

None known.

Specific hazards arising from the chemical

During fire, gases hazardous to health may be formed. Carbon oxides, paraldehyde, acetaldehyde, and other unknown compounds can be formed during the combustion of Metaldehyde.

Special protective equipment and precautions for firefighters

Self-contained breathing apparatus and full protective clothing must be worn in case of fire.

Fire fighting equipment/instructions

Use water spray to cool unopened containers.

Specific methods

Use standard firefighting procedures and consider the hazards of other involved materials.

General fire hazards

No unusual fire or explosion hazards noted.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

Keep unnecessary personnel away. For personal protection, see section 8 of the SDS.

Methods and materials for containment and cleaning up

This product is miscible in water. Stop the flow of material, if this is without risk. Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). Use only non-sparking tools. Take precautionary measures against static discharge. Dike far ahead of spill for later disposal. If contaminated, sweep up or vacuum up spillage and collect in suitable container for disposal. Shovel the material into waste container. Following product recovery, flush area with water. For waste disposal, see section 13 of the SDS.

Environmental precautions

Avoid discharge into drains, water courses or onto the ground.

7. Handling and storage

Precautions for safe handling

Avoid breathing dust. Avoid contact with eyes, skin, and clothing. Avoid prolonged exposure. Provide adequate ventilation. Do not use in areas without adequate ventilation. Keep away from food, drink and animal feedstuffs. Keep out of the reach of children. Minimize dust generation and accumulation. Wear appropriate personal protective equipment. When using, do not eat, drink or smoke. Wash thoroughly after handling. Observe good industrial hygiene practices. Avoid release to the environment.

Conditions for safe storage, including any incompatibilities

Do not store in direct sunlight. Store in original tightly closed container. Store away from incompatible materials (see Section 10 of the SDS). Store in a well-ventilated place. Use care in handling/storage.

8. Exposure controls/personal protection

Occupational exposure limits

US. OSHA Table Z-3 (29 CFR 1910.1000)

Components	Type	Value	Form
(includes trace of Crystalline silica, quartz) (CAS 14808-60-7)	TWA	0.3 mg/m3	Total dust.
		0.1 mg/m3	Respirable.
		2.4 mppcf	Respirable.

US. OSHA Table Z-3 (29 CFR 1910.1000)

Components	Type	Value	Form
Other ingredients	TWA	0.8 mg/m ³ 20 mppcf	

US. ACGIH Threshold Limit Values

Components	Type	Value	Form
(includes trace of Crystalline silica, quartz) (CAS 14808-60-7)	TWA	0.025 mg/m ³	Respirable fraction.

US. NIOSH: Pocket Guide to Chemical Hazards

Components	Type	Value	Form
(includes trace of Crystalline silica, quartz) (CAS 14808-60-7)	TWA	0.05 mg/m ³	Respirable dust.
Other ingredients	TWA	6 mg/m ³	

Biological limit values

No biological exposure limits noted for the ingredient(s).

Appropriate engineering controls

Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level.

Individual protection measures, such as personal protective equipment**Eye/face protection**

If contact is likely, safety glasses with side shields are recommended.

Skin protection**Hand protection**

For prolonged or repeated skin contact use suitable protective gloves.

Other

Wear suitable protective clothing.

Respiratory protection

In case of insufficient ventilation, wear suitable respiratory equipment.

Thermal hazards

Wear appropriate thermal protective clothing, when necessary.

General hygiene considerations

Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

9. Physical and chemical properties**Appearance**

Gray to brown or blue granule

Physical state

Solid.

Form

Granular.

Color

Gray to brown or blue

Odor

Aldehyde odor

Odor threshold

Not available.

pH

Not available.

Melting point/freezing point

Not applicable

Initial boiling point and boiling range

Not applicable

Flash point

Not available.

Evaporation rate

Not available

Flammability (solid, gas)

Not available.

Upper/lower flammability or explosive limits**Flammability limit - lower (%)**

Not available.

Flammability limit - upper (%)

Not available.

Explosive limit - lower (%)

Not available.

Explosive limit - upper (%)	Not available.
Vapor pressure	1.90E+00 @ 24°C (active ingredient)
Vapor density	6.06 (air = 1)
Relative density	1.3 - 1.4 g/cm3
Solubility(ies)	
Solubility (water)	0.2 g/l @ 17°C for active ingredient
Partition coefficient (n-octanol/water)	Not available
Auto-ignition temperature	Not available.
Decomposition temperature	Not available.
Viscosity	Not available.
Other information	
Bulk density	81.3 - 87.5 lb/ft3
Percent volatile	5 %
pH in aqueous solution	Not available

10. Stability and reactivity

Reactivity	The product is stable and non-reactive under normal conditions of use, storage and transport.
Chemical stability	Material is stable under normal conditions.
Possibility of hazardous reactions	Hazardous polymerization does not occur.
Conditions to avoid	Avoid temperatures exceeding the flash point. Contact with incompatible materials.
Incompatible materials	Fluorine. Chlorine.
Hazardous decomposition products	Acetaldehyde can be formed by decomposition of Metaldehyde. Decomposition by burning may result in carbon monoxide and other toxic fumes and vapors of unknown composition.

11. Toxicological information

Information on likely routes of exposure

Inhalation	No adverse effects due to inhalation are expected.
Skin contact	No adverse effects due to skin contact are expected.
Eye contact	Direct contact with eyes may cause temporary irritation.
Ingestion	Expected to be a low ingestion hazard.

Symptoms related to the physical, chemical and toxicological characteristics

Based on animal toxicity information for metaldehyde, it is anticipated that this material would be harmful upon ingestion and that direct contact may elicit mild eye and skin irritation. Overexposure to metaldehyde may cause excessive salivation, vomiting, nausea, acetonuria (odor of acetone on breath), convulsions, increased body temperature, depression of medullary respiratory and vasomotor control centers and coma. May be fatal. [Note: Because of the low amounts of metaldehyde in the product, it is unlikely the victim can be exposed to sufficient quantities of metaldehyde to have coma or death induced.] Overexposure may aggravate preexisting conditions associated with the kidney, liver, and brain.

Information on toxicological effects

Acute toxicity May cause respiratory irritation.

Product	Species	Test Results
DURHAM® METALDEHYDE GRANULES 7.5		
acute dermal		
LD50	rabbit	> 5050 mg/kg (Toxicity Category IV).
oral		
LD50	rat	> 5000 mg/kg (Toxicity Category IV).

Components	Species	Test Results
Other ingredients		
Acute		
Oral		
LD50	Mouse	> 15000 mg/kg
	Rat	> 22500 mg/kg
Skin corrosion/irritation	Causes slight skin irritation.	
Irritation Corrosion - Skin		
DURHAM® METALDEHYDE GRANULES 7.5		, Toxicity Category IV Result: irritating Organ: skin Severity: Slightly
Serious eye damage/eye irritation	Slight irritant.	
Irritation Corrosion - Eye		
DURHAM® METALDEHYDE GRANULES 7.5		, Toxicity Category IV Result: Irritating Organ: eye Severity: Minimally
Respiratory or skin sensitization		
Respiratory sensitization	Not a respiratory sensitizer.	
Skin sensitization	This product is not expected to cause skin sensitization.	
Skin sensitization		
DURHAM® METALDEHYDE GRANULES 7.5		, Not a sensitizer Species: guinea pig Organ: skin Severity: none
Germ cell mutagenicity	No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.	
Carcinogenicity	None of the components found in appreciable quantities has been found to be carcinogenic by IARC, NTP, or OSHA. Acetaldehyde, a decomposition product of Metaldehyde, has been listed as carcinogenic in the IARC monographs. Respirable crystalline silica is listed as being carcinogenic by both IARC and NTP. Both are present at less than 0.01% in the product.	
IARC Monographs. Overall Evaluation of Carcinogenicity		
(includes trace of Crystalline silica, quartz) (CAS 14808-60-7)		1 Carcinogenic to humans.
Other ingredients (CAS NA)		3 Not classifiable as to carcinogenicity to humans.
OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)		
Not listed.		
US. National Toxicology Program (NTP) Report on Carcinogens		
(includes trace of Crystalline silica, quartz) (CAS 14808-60-7)		Known To Be Human Carcinogen.
Reproductive toxicity	This product is not expected to cause reproductive or developmental effects.	
Specific target organ toxicity - single exposure	Not classified.	
Specific target organ toxicity - repeated exposure	Not classified.	
Aspiration hazard	Not an aspiration hazard.	
Chronic effects	No adverse effects due to inhalation are expected.	
12. Ecological information		
Ecotoxicity	The product is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.	
Persistence and degradability	No data is available on the degradability of this product.	
Bioaccumulative potential	No data available.	
Mobility in soil	No data available.	

Other adverse effects No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

13. Disposal considerations

Disposal instructions Dispose of contents/container in accordance with all applicable local/regional/national/international regulations.

Local disposal regulations Dispose in accordance with all applicable regulations.

Hazardous waste code The waste code should be assigned in discussion between the user, the producer and the waste disposal company.

Waste from residues / unused products Dispose of in accordance with all applicable regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).

Contaminated packaging Empty containers should be taken to an approved waste handling site for recycling or disposal according to all applicable regulations. Since emptied containers may retain product residue, follow label warnings even after container is emptied.

14. Transport information

DOT
Not regulated as dangerous goods.

IATA
Not regulated as dangerous goods.

IMDG
Not regulated as dangerous goods.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code Not applicable.

15. Regulatory information

US federal regulations One or more components are not listed on TSCA. This product is not known to be a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200. This chemical is a pesticide product registered by the United States Environmental Protection Agency and is subject to certain labeling requirements under federal pesticide law. These requirements differ from the classification criteria and hazard information required for safety data sheets (SDS), and for workplace labels of non-pesticide chemicals. The hazard information required on the pesticide label is reproduced below. The pesticide label also includes other important information, including directions for use.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not regulated.

CERCLA Hazardous Substance List (40 CFR 302.4)

Metaldehyde (CAS 108-62-3) Listed.

SARA 304 Emergency release notification

Not regulated.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not listed.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories Immediate Hazard - Yes
Delayed Hazard - Yes
Fire Hazard - No
Pressure Hazard - No
Reactivity Hazard - No

SARA 302 Extremely hazardous substance

Not listed.

SARA 311/312 Hazardous chemical No

SARA 313 (TRI reporting)
Not regulated.

Other federal regulations

Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List
Not regulated.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

Not regulated.

Safe Drinking Water Act (SDWA) Not regulated.

US state regulations

US. California Controlled Substances. CA Department of Justice (California Health and Safety Code Section 11100)

Not listed.

US. California. Candidate Chemicals List. Safer Consumer Products Regulations (Cal. Code Regs, tit. 22, 69502.3, subd. (a))

(includes trace of Crystalline silica, quartz) (CAS 14808-60-7)

US. Massachusetts RTK - Substance List

(includes trace of Crystalline silica, quartz) (CAS 14808-60-7)

Metalddehyde (CAS 108-62-3)

Other ingredients (CAS NA)

US. New Jersey Worker and Community Right-to-Know Act

(includes trace of Crystalline silica, quartz) (CAS 14808-60-7)

Metalddehyde (CAS 108-62-3)

Other ingredients (CAS NA)

US. Pennsylvania Worker and Community Right-to-Know Law

(includes trace of Crystalline silica, quartz) (CAS 14808-60-7)

Metalddehyde (CAS 108-62-3)

Other ingredients (CAS NA)

US. Rhode Island RTK

Not regulated.

US. California Proposition 65

WARNING: This product contains a chemical known to the State of California to cause cancer.

International Inventories

Country(s) or region	Inventory name	On inventory (yes/no)*
Canada	Domestic Substances List (DSL)	No
Canada	Non-Domestic Substances List (NDSL)	No
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	No
Europe	European List of Notified Chemical Substances (ELINCS)	No
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	No

*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)
A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

16. Other information, including date of preparation or last revision

Issue date 04-08-2015

References
ACGIH®: American Conference of Governmental Industrial Hygienists
CERCLA: Comprehensive Environmental Response, Compensation, and Liability Act
EPA: Environmental Protection Agency
FIFRA: Federal Insecticide, Fungicide, and Rodenticide Act
IARC: International Agency for Research on Cancer
NTP: National Toxicology Program
OSHA: Occupational Safety and Health Agency
SARA: Superfund Amendments and Reauthorization Act
TSCA: Toxic Substances Control Act
DOT: Department of Transportation
IMDG: International Maritime Dangerous Goods
IATA: International Air Transport Association

Version # 01

Further information Not available.

HMIS® ratings
Health: 4*
Flammability: 0
Physical hazard: 0

NFPA ratings
Health: 4
Flammability: 0
Instability: 0

Disclaimer

AMVAC Chemical Corporation cannot anticipate all conditions under which this information and its product, or the products of other manufacturers in combination with its product, may be used. It is the user's responsibility to ensure safe conditions for handling, storage and disposal of the product, and to assume liability for loss, injury, damage or expense due to improper use. This information is provided for the limited guidance to the user. While AMVAC believes that the information is, as of the date hereof, reliable, it is the user's responsibility to determine the suitability of the information for its purposes. The user is advised not to construe the information as absolutely complete since additional information may be necessary or desirable when particular, exceptional, or variable conditions or circumstances exist (like combinations with other materials), or because of applicable regulations. No express or implied warranty of merchantability or fitness for a particular purpose or otherwise is made hereunder with respect to the information or the product to which the information relates.

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Revision Information

Product and Company Identification: Synonyms
Composition / Information on Ingredients: Ingredients
Physical & Chemical Properties: Multiple Properties
Toxicological Information: Toxicological Property Data
Transport Information: Material Transportation Information
HazReg Data: International Inventories
GHS: Classification

SAFETY DATA SHEET

Issuing Date 5/01/2015



The supplier identified below generated this SDS using the UL SDS template. UL did not test, certify, or approve the substance described in this SDS, and all information in this SDS was provided by the supplier or was reproduced from publically available regulatory data sources. UL makes no representations or warranties regarding the completeness or accuracy of the information in this SDS and disclaims all liability in connection with the use of this information or the substance described in this SDS. The layout, appearance and format of this SDS is © 2014 UL LLC. All rights reserved.

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

Product identifier S6006

Product Name Sweeney's Poison Peanuts Pellets Mole & Gopher Bait II

Other means of identification

Synonyms None

Size 6 oz

Recommended use of the chemical and restrictions on use

Recommended Use Rodenticide - Non-Aerosol

Uses advised against It is a violation of Federal law to use this product in a manner inconsistent with its labeling.

Details of the supplier of the safety data sheet

Supplier Name Senoret Chemical Company, Inc.

Supplier Address 69 North Locust St.

Lititz

PA

17543

US

Supplier Phone Number Phone:(717) 626-2125

Fax:(717) 626-1912

Contact Phone(717) 626-2125

Regulatory Licenses EPA Reg. No. 149-16

2. HAZARDS IDENTIFICATION

Classification

This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)


Acute toxicity - Oral

Category 2



GHS Label elements, including precautionary statements

Emergency Overview

Signal word	Danger
Hazard Statements Fatal if swallowed May form combustible dust concentrations in air	
	
Appearance Dark gray/black	Physical State Granular Solid
	Odor Garlic

Precautionary Statements - Prevention

Wash face, hands and any exposed skin thoroughly after handling
Do not eat, drink or smoke when using this product

Precautionary Statements - Response

Specific treatment (see .? on this label)

Ingestion

IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician
Rinse mouth

Precautionary Statements - Storage

Store locked up

Precautionary Statements - Disposal

Dispose of contents/container to an approved waste disposal plant

Hazards not otherwise classified (HNOC)

Not applicable

Unknown Toxicity

90.8% of the mixture consists of ingredient(s) of unknown toxicity

Other information

Very toxic to aquatic life with long lasting effects

Interactions with Other Chemicals

No information available.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS No	Weight-%	Trade Secret
Paraffin	8002-74-2	10 - 30	*
Sucrose	57-50-1	1 - 5	*
Zinc phosphide	1314-84-7	1 - 5	*

*The exact percentage (concentration) of composition has been withheld as a trade secret

4. FIRST AID MEASURES

First aid measures

General Advice

Show this safety data sheet to the doctor in attendance. Immediate medical attention is required.

Eye Contact

Rinse thoroughly with plenty of water, also under the eyelids. If symptoms persist, call a physician.

Skin Contact

Wash with soap and water.

Inhalation

Remove to fresh air.

Ingestion

Do NOT induce vomiting. Rinse mouth immediately and drink plenty of water. Never give anything by mouth to an unconscious person. Call a physician or poison control center immediately.

Most important symptoms and effects, both acute and delayed

Most Important Symptoms and Effects No information available.

Indication of any immediate medical attention and special treatment needed

Notes to Physician

Treat symptomatically.

5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable extinguishing media

CAUTION: Use of water spray when fighting fire may be inefficient.

Specific Hazards Arising from the Chemical

Avoid generation of dust. Fine dust dispersed in air may ignite.

Uniform Fire Code Highly Toxic: Solid
COMBUSTIBLE DUST/POWDER

Hazardous Combustion Products

Carbon oxides.

Explosion Data

Sensitivity to Mechanical Impact No.

Sensitivity to Static Discharge Yes.

Protective equipment and precautions for firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal Precautions Avoid contact with eyes. Ensure adequate ventilation. Avoid generation of dust. Use personal protective equipment as required. Do not breathe dust. ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area). Take precautionary measures against static discharges.

Other Information Refer to protective measures listed in Sections 7 and 8.

Environmental Precautions

Environmental Precautions Refer to protective measures listed in Sections 7 and 8.

Methods and material for containment and cleaning up

Methods for Containment Prevent further leakage or spillage if safe to do so. Prevent dust cloud.

Methods for cleaning up Take up with inert, damp, non-combustible material using clean non-sparking tools and place into loosely covered plastic containers for later disposal.



7. HANDLING AND STORAGE

STORAGE AND DISPOSAL:

Do not contaminate water, food or feed by storage or disposal.

STORAGE: Store only in original container, in a dry place inaccessible to children, pets and domestic animals.

PESTICIDE DISPOSAL AND CONTAINER HANDLING: Nonrefillable Container. Do not reuse or refill this container. If empty: Offer for recycling if available or place in trash. If partly filled: Call your local solid waste agency for disposal instructions. Never place unused product down any indoor or outdoor drain.

Incompatible Products None known based on information supplied.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Exposure Guidelines

Chemical Name	ACGIH TLV	OSHA PEL	NIOSH IDLH
Paraffin 8002-74-2	TWA: 2 mg/m ³	(vacated) TWA: 2 mg/m ³	TWA: 2 mg/m ³
Sucrose 57-50-1	TWA: 10 mg/m ³	TWA: 15 mg/m ³ total dust TWA: 5 mg/m ³ respirable fraction (vacated) TWA: 15 mg/m ³ total dust (vacated) TWA: 5 mg/m ³ respirable fraction	TWA: 10 mg/m ³ total dust TWA: 5 mg/m ³ respirable dust

ACGIH TLV: American Conference of Governmental Industrial Hygienists - Threshold Limit Value OSHA PEL: Occupational Safety and Health Administration - Permissible Exposure Limits Immediately Dangerous to Life or Health

Other Exposure Guidelines Vacated limits revoked by the Court of Appeals decision in AFL-CIO v. OSHA, 965 F.2d 962 (11th Cir., 1992) See section 15 for national exposure control parameters

Appropriate engineering controls

Engineering Measures Showers
Eyewash stations
Ventilation systems

Individual protection measures, such as personal protective equipment

Eye/Face Protection Wear safety glasses with side shields (or goggles).

Skin and Body Protection No special protective equipment required.

Respiratory Protection No protective equipment is needed under normal use conditions. If exposure limits are exceeded or irritation is experienced, ventilation and evacuation may be required.

Hygiene Measures Handle in accordance with good industrial hygiene and safety practice. Do not eat, drink or smoke when using this product. Wash hands before breaks and immediately after handling the product. Do not breathe dust.



9. PHYSICAL AND CHEMICAL PROPERTIES

Physical and Chemical Properties

Physical State	Granular, Solid	Odor	Garlic
Appearance	Dark gray/black	Odor Threshold	No information available
Color	No information available		

<u>Property</u>	<u>Values</u>	<u>Remarks</u>	<u>Method</u>
pH	UNKNOWN	None known	
Melting / freezing point	No data available	None known	
Boiling point / boiling range	1100 °C / 2012 °F	None known	
Flash Point	5001 C / 9034 F	None known	
Evaporation Rate	No data available	None known	
Flammability (solid, gas)	No data available	None known	
Flammability Limit in Air			
Upper flammability limit	No data available		
Lower flammability limit	No data available		
Vapor pressure	No data available	None known	
Vapor density	No data available	None known	
Specific Gravity	0.573 gm/ml	None known	
Water Solubility	Soluble in water	None known	
Solubility in other solvents	No data available	None known	
Partition coefficient: n-octanol/water	No data available	None known	
Autoignition temperature	No data available	None known	
Decomposition temperature	No data available	None known	
Kinematic viscosity	No data available	None known	
Dynamic viscosity	No data available	None known	
Explosive properties	No data available		
Oxidizing Properties	No data available		

Other Information

Softening Point	No data available
VOC Content (%)	No data available
Particle Size	No data available
Particle Size Distribution	

Carcinogenicity	Contains no ingredient listed as a carcinogen.
Reproductive Toxicity	No information available.
STOT - single exposure	No information available.
STOT - repeated exposure	No information available.
Chronic Toxicity	No known effect based on information supplied.
Target Organ Effects	Central Vascular System (CVS). Eyes. Respiratory system. Skin. Liver.
Aspiration Hazard	No information available.

Numerical measures of toxicity Product Information

The following values are calculated based on chapter 3.1 of the GHS document

ATEmix (oral)
23.00 mg/kg

12. ECOLOGICAL INFORMATION

Ecotoxicity

Very toxic to aquatic life with long lasting effects.

Persistence and Degradability

No information available.

Bioaccumulation

No information available

Other adverse effects

No information available.

13. DISPOSAL CONSIDERATIONS

Waste treatment methods

Disposal methods This material, as supplied, is not a hazardous waste according to Federal regulations (40 CFR 261). This material could become a hazardous waste if it is mixed with or otherwise comes in contact with a hazardous waste, if chemical additions are made to this material, or if the material is processed or otherwise altered. Consult 40 CFR 261 to determine whether the altered material is a hazardous waste. Consult the appropriate state, regional, or local regulations for additional requirements.

Contaminated Packaging Dispose of contents/containers in accordance with local regulations.

US EPA Waste Number U249 P122

Chemical Name	RCRA	RCRA - Basis for Listing	RCRA - D Series Wastes	RCRA - U Series Wastes
Zinc phosphide 1314-84-7	P122 U249			U249

Chemical Name	RCRA - Halogenated Organic Compounds	RCRA - P Series Wastes	RCRA - F Series Wastes	RCRA - K Series Wastes
Zinc phosphide 1314-84-7		P122		

California Hazardous Waste Codes 232

This product contains one or more substances that are listed with the State of California as a hazardous waste.

Chemical Name	California Hazardous Waste
Zinc phosphide 1314-84-7	Toxic

14. TRANSPORT INFORMATION

DOT
Proper Shipping Name NOT REGULATED
Hazard Class NON-REGULATED
 N/A

TDG Not regulated

MEX Not regulated

ICAO Not regulated

IATA
UN-No.
Proper Shipping Name NON-REGULATED
Hazard Class
Packing Group

IMDG/IMO
UN-No. Not Regulated
Hazard Class
Packing Group
Marine Pollutant

RID Not regulated



ADR Not regulated

ADN Not regulated

15. REGULATORY INFORMATION

International Inventories

TSCA Complies
 DSL All components are listed either on the DSL or NDSL.

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
 DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List

US Federal Regulations

SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product contains a chemical or chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372

Chemical Name	CAS No	Weight-%	SARA 313 - Threshold Values %
Zinc phosphide - 1314-84-7	1314-84-7	1 - 5	1.0

SARA 311/312 Hazard Categories

Acute Health Hazard Yes
 Chronic Health Hazard No
 Fire Hazard Yes
 Sudden release of pressure hazard No
 Reactive Hazard No

CWA (Clean Water Act)

This product contains the following substances which are regulated pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42)

Chemical Name	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants	CWA - Hazardous Substances
Zinc phosphide 1314-84-7		X		X

CERCLA

This material, as supplied, contains one or more substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302)

Chemical Name	Hazardous Substances RQs	Extremely Hazardous Substances RQs	RQ
Zinc phosphide 1314-84-7	100 lb	100 lb	RQ 100 lb final RQ RQ 45.4 kg final RQ

US State Regulations

California Proposition 65

This product contains the following Proposition 65 chemicals.



This chemical is a pesticide product registered by the Environmental Protection Agency and is subject to certain labeling requirements under federal pesticide law. These requirements differ from the classification criteria and hazard information required for safety data sheets and for workplace labels of non-pesticide chemicals. The hazard information required on the pesticide label is reproduced below. The pesticide label also includes other important information, including directions for use.

Pesticide Label Signal Word: Caution

Harmful if swallowed, absorbed through the skin, or inhaled. Avoid contact with eyes, skin, or clothing. Avoid breathing dust. Keep away from children, pets and domestic animals.

ENVIRONMENTAL HAZARDS: This product is extremely toxic to mammals, birds, fish, and other wildlife. Wildlife feeding on treated bait may be killed. Dogs, cats and other predatory and scavenging mammals and birds might be poisoned if they feed upon animals that have eaten this bait. Do not apply directly to water.

16. OTHER INFORMATION

NFPA	Health Hazards 1	Flammability 1	Instability 0	Physical and Chemical Hazards - Personal Protection X
HMIS	Health Hazards 3	Flammability 1	Physical Hazard 0	

Prepared By Product Stewardship
23 British American Blvd.
Latham, NY 12110
1-800-572-6501

Issuing Date 14-Jun-2011
Revision Date 30-Dec-1899
Revision Note No information available

Disclaimer
The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text

End of Safety Data Sheet





SAFETY DATA SHEET

SDS NUMBER: 677023-15-LPI

SDS REVISIONS: FORMAT

DATE OF ISSUE: 02/02/15

LEAF LIFE® SLUGGO®

SUPERSEDES: 11/06/12

FOR CHEMICAL EMERGENCY, SPILL, LEAK, FIRE, EXPOSURE OR ACCIDENT, CALL CHEMTREC - DAY OR NIGHT 1-800-424-9300

1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

1.1 PRODUCT IDENTIFIER:

TRADE NAME: LEAF LIFE® SLUGGO® SNAIL AND SLUG BAIT

1.2 RECOMMENDED USE: MOLLUSCICIDE FOR CONTROL OF SNAILS AND SLUGS

1.3 SUPPLIER DETAILS:

LOVELAND PRODUCTS, INC.

P.O. Box 1286 • Greeley, CO 80632-1286

1.4 24 Hour Emergency Phone: 1-800-424-9300 - Medical Emergencies: 1-866-944-8565

U.S. Coast Guard National Response Center: 1-800-424-8802

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

Classification according to 29 CFR 1910.1200

Not classified

2.2 Label elements

Signal word: NONE

Hazard Statement: This mixture does not meet the criteria for classification.

Precautionary

Statement: (Prevention): Observe good industrial hygiene practices.

Precautionary

Statement: (Response): Wash hands after handling.

Precautionary

Statement: (Storage): Store away from incompatible materials.

Precautionary

Statement: (Disposal): Dispose of wastes and residues in accordance with local authority requirements.

2.3 Other hazards

None known

KEEP OUT OF REACH OF CHILDREN –

Appearance and odor: Light tan pellets with wheat flour odor.

Potential Health effects

Routes of exposure Eye contact.

Eyes Causes moderate eye irritation.

Skin No data available.

Inhalation No data available.

Ingestion No data available.

Target organs

Eyes.

Signs and symptoms

No data available.

Potential environmental effects This product is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have harmful or damaging effect on the environment.

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3. COMPOSITION, INFORMATION ON INGREDIENTS**3.1 Substances****3.2 Mixtures**

This material has no classification according to 29 CFR 1910.1200

Chemical Name:	CAS No.	Classification	Concentration [%]
Iron Phosphate	10045-86-0	Not classified	1.00
*Other ingredients			99.00

*Ingredients not specifically listed are non-hazardous or are to be considered proprietary or confidential business information per 29 CFR 1910.1200(i)

4. FIRST AID MEASURES**4.1 Description of First Aid Measures**

General Advice: Get medical attention if symptoms occur.

If in eyes: Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Call a poison control center or doctor for treatment advice.

4.2 Most Important Symptoms and Effects, Acute and Delayed

Symptoms: Eyes: Causes moderate irritation.

4.3 Immediate Medical Attention and Special TreatmentTreatment: Treat symptomatically. Symptoms may be delayed.
FOR A MEDICAL EMERGENCY INVOLVING THIS PRODUCT CALL: 1-866-944-8565
Take container, label or product name with you when seeking medical attention.

NOTES TO PHYSICIAN: Treat symptomatically.

5. FIRE FIGHTING MEASURES**5.1 EXTINGUISHING MEDIA:**Suitable Extinguishing Media: Use medium appropriate to surrounding fire. Dry chemical, carbon dioxide (CO₂), alcohol foam, foam, water spray or fog.**5.2 SPECIAL HAZARDS ARISING FROM THE SUBSTANCE OR MIXTURE:**

Specific Hazards During Firefighting: Oxides of carbon and other unknown materials may be formed in a fire situation.

5.3 SPECIAL PROTECTIVE EQUIPMENT AND PRECAUTIONS FOR FIREFIGHTERS

Special Protective Equipment for Firefighters: Self-contained breathing apparatus and full protective gear should be worn in fighting large fires involving chemicals. Use water spray to keep fire exposed containers cool. Keep people away. Isolate fire and deny unnecessary entry.

6. ACCIDENTAL RELEASE MEASURES**6.1 PERSONAL PRECAUTIONS, PROTECTIVE EQUIPMENT AND EMERGENCY PROCEDURES**

Personal Precautions: Avoid inhalation of vapors and spray mist and contact with skin and eyes. Ensure adequate ventilation. Wear suitable protective clothing.

6.2 ENVIRONMENTAL PRECAUTIONS

Environmental Precautions: Do not apply directly to water, or to areas where surface water is present or to intertidal areas below the mean high water mark. Do not contaminate water when disposing of equipment washwaters or rinsate.

6.3 METHODS AND MATERIALS FOR CONTAINMENT AND CLEAN-UP

Methods for Clean-Up: Sweep up solid spills immediately and transfer to suitable containers for possible land application according to label use or for disposal. Check local, state and federal regulations for proper disposal. Never return spills to original containers for re-use.

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7. HANDLING AND STORAGE**7.1 PRECAUTIONS FOR SAFE HANDLING:**

Advice on Safe Handling:

Wash hands before eating, drinking, chewing gum, using tobacco or using the toilet. Remove clothing immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing. Remove PPE immediately after handling this product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.

7.2 CONDITIONS FOR SAFE STORAGE:

Requirements for Storage Areas and Containers:

Store in original container only. Keep container closed when not in use. Do not store near food or feed. In case of spill or leak on floor or paved surfaces, soak up with vermiculite, earth, or synthetic absorbent. Combustible. Do not store near heat or open flame.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION**8.1 CONTROL PARAMETERS:****OCCUPATIONAL EXPOSURE LIMITS**

U.S. Workplace Exposure Level (ACGIH) TLVs

Components	Type	Value
No data available.		

U.S. Workplace Exposure Level (OSHA) PELs

Components	Type	Value
No data available.		

Biological limit values

ACGIH Biological Exposure Indices

Components	Value	Specimen
No listings		

8.2 EXPOSURE CONTROLS:**Engineering Measures**

Provide adequate general and local exhaust ventilation. Observe Occupational Exposure Limits and minimize the risk of inhalation of vapors and spray mists. Provide eyewash station and safety shower.

Individual Protection Measures:

Eye / Face Protection: Goggles or shielded safety glasses are recommended.

Skin Protection: Long-sleeved shirt and long pants. Suitable protective gloves. Shoes plus socks.

Respiratory Protection: In case of inadequate ventilation or risk of inhalation of mists or vapors, use suitable respiratory equipment approved by MSHA/NIOSH. Wear respiratory protection during operations where spraying or misting occurs. If respirators are used, a program should be in place to assure compliance with 29 CFR 1910.134, the OSHA Respiratory Protection standard. Wear air supplied respiratory protection if exposure concentrations are unknown.

9. PHYSICAL AND CHEMICAL PROPERTIES**9.1 APPEARANCE :**

Pellet

ODOR: Wheat flour odor.

ODOR THRESHOLD: No data available.

COLOR: Light tan.

pH: Not applicable.

MELTING POINT / FREEZING POINT: Not applicable.

BOILING POINT: Not applicable.

FLASH POINT: Not applicable.

FLAMMABILITY (solid, gas): Not applicable.

UPPER / LOWER FLAMMABILITY OR EXPLOSIVE LIMITS: No data available.

VAPOR PRESSURE: Not applicable.

SOLUBILITY: Insoluble.

PARTITION CO-EFFICIENT, n-OCTANOL / WATER: No data available.

AUTO-IGNITION TEMPERATURE: No data available.

DECOMPOSITION TEMPERATURE: No data available.

VISCOSITY: (kinematic): No data available

SPECIFIC GRAVITY (Water = 1): 0.79 g/ml

BULK DENSITY: 49.3 lbs./ft³ / 789.7 kg/m³

Note: These physical data are typical values based on material tested but may vary from sample to sample. Typical values should not be construed as a guaranteed analysis of any specific lot or as specification items.

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10. STABILITY AND REACTIVITY**10.1 REACTIVITY**

Stable

10.2 CHEMICAL STABILITY

Stable under normal temperature conditions

10.3 POSSIBILITY OF HAZARDOUS REACTIONS

No data available. Will not polymerize.

10.4 CONDITIONS TO AVOID

Avoid excessive heat.

10.5 INCOMPATIBLE MATERIALS

Strong acids. Strong bases.

10.6 HAZARDOUS DECOMPOSITION PRODUCTS

Oxides of nitrogen and oxides of carbon.

11 TOXICOLOGICAL INFORMATION**11.3 LIKELY ROUTES OF EXPOSURE**

Eye contact.

LC₅₀ (male rat): Not applicable.LD₅₀ Oral (rat): >5,000 mg/kgLD₅₀ Dermal (rat): > 5,000 mg/kg

Acute Toxicity Estimates: No data available.

Skin Irritation (rabbit): No data available.

Eye Irritation (rabbit): Moderate irritant.

Specific Target Organ Toxicity: No data available.

Aspiration: No data available

Skin Sensitization (guinea pig): Not a sensitizer

Carcinogenicity: No data available.

Germ Cell Mutagenicity: No data available

Interactive Effects: None known

12 ECOLOGICAL INFORMATION**12.3 ECOTOXICITY**

The product is a molluscicide.

Ecotoxicological Data

No data available

Species**Test Results**

Drift or runoff may adversely affect non-target plants.

Do not apply directly to water.

Do not contaminate water when disposing of equipment wash water.

Do not apply when weather conditions favor drift from target area.

12.2 PERSISTENCE AND DEGRADABILITY

Biodegradability: No data available

12.3 BIOACCUMULATIVE POTENTIAL

Bioaccumulation: No data available

12.4 MOBILITY IN SOIL

No data available.

12.5 OTHER ADVERSE EFFECTS

Assessment: No data available.

13 DISPOSAL CONSIDERATIONS**13.1 WASTE TREATMENT METHODS****PESTICIDE DISPOSAL:** Wastes resulting from the use of this product may be disposed of at an approved waste disposal facility.**CONTAINER DISPOSAL:** Non-refillable container. Do not reuse or refill this container. Completely empty metal drum, plastic bag, box, or plastic tote into application equipment. Then dispose of empty metal drum, plastic bag, box or plastic tote in a sanitary landfill or by incineration, or if allowed by State and local authorities, by burning. If burned, stay out of smoke. Do not contaminate water, food or feed by storage or disposal.

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14 TRANSPORT INFORMATION**14.3 LAND TRANSPORT**

DOT Shipping Description: NOT REGULATED BY DOT

U.S. Surface Freight Classification: INSECTICIDES, INSECT REPELLENTS, NOI, OTHER THAN POISON (NMFC 102120; CLASS: 60)

15 REGULATORY INFORMATION**15.1 SAFETY, HEALTH AND ENVIRONMENTAL REGULATIONS****NFPA & HMIS Hazard Ratings:****NFPA**

1	Health	0	Least
0	Flammability	1	Slight
0	Instability	2	Moderate
		3	High
		4	Severe

HMIS

1	Health
0	Flammability
0	Reactivity
B	PPE

SARA Hazard Notification/Reporting**SARA Title III Hazard Category:**

Immediate	<u>Y</u>
Delayed	<u>N</u>

Fire	<u>N</u>
Reactive	<u>N</u>

Sudden Release of Pressure N

Reportable Quantity (RQ) under U.S. CERCLA: Not listed.

SARA, Title III, Section 313: Not listed.

RCRA Waste Code: Not listed.

CA Proposition 65: Not listed.

This chemical is a pesticide product registered by the United States Environmental Protection Agency and is subject to certain labeling requirements under federal pesticide law. These requirements differ from the classification criteria and hazard information required for safety data sheets (SDS), and for workplace labels of non-pesticide chemicals. Following is the hazard information as required on the pesticide label:

CAUTION

Causes moderate eye irritation.

Avoid contact with eyes or clothing.

Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco, or using the toilet.

16 OTHER INFORMATION

SDS STATUS: Format revised.

PREPARED BY: Registrations and Regulatory Affairs

REVIEWED BY: Environmental Health and Safety

EPA REG. NO.: 67702-3-34704

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SAFETY DATA SHEET

Version: 2.0
Date:
10/30/2011



1. PRODUCT AND COMPANY IDENTIFICATION

BLAZON® BLUE 2X2.5

Product Information: BLAZON® BLUE 2X2.5

Company Identification:

Milliken Chemical
P.O. Box 1926
Spartanburg, SC, 29303 USA
1-864-472-9041
msds@milliken.com

Emergency telephone number:

Chemtrec:

1-800-424-9300 (Chemtrec - US)
1-703-527-3887 (International)

2. HAZARDS IDENTIFICATION

Emergency Overview

This material is a concentrated colorant. The health hazards of this product should be low under normal industrial and commercial uses. Do not allow material to enter soil or surface water.

HFRP Rating

Health	0
Flammability	0
Reactivity	0
Personal protection	B

Eye

May cause eye irritation. Not known to cause permanent injury to eye tissue.

Inhalation

No information regarding inhalation available.

Skin

Not expected to be a skin irritant

Ingestion

No adverse effects due to ingestion are expected.

The product has been classified according to the legislation in force.

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3. COMPOSITION / INFORMATION ON INGREDIENTS

Product name	CAS Number	Amount
Proprietary Colorant Blend	Proprietary	100.0 %

4. FIRST AID MEASURES

Eye	Flush thoroughly with water. If irritation occurs, get medical assistance.
Inhalation	Under normal conditions of intended use, this material is not expected to be an inhalation hazard. When breathing is difficult, properly trained personnel may assist affected person by administering 100% oxygen. Get medical attention if any discomfort continues.
Skin	Wash skin thoroughly with soap and water for several minutes. Immediately remove contaminated clothing. Get medical attention if any discomfort continues.
Ingestion	Give one or two glasses of water if patient is alert and able to swallow. Seek immediate medical attention. Do not induce vomiting.

5. FIRE-FIGHTING MEASURES

Fire Fighting Media	Water spray, foam, dry powder or carbon dioxide.
Fire Fighting Instructions	Use standard firefighting procedures and consider the hazards of other involved materials. Firefighters must use standard protective equipment including flame retardant coat, helmet with face shield, gloves, rubber boots, and in enclosed spaces, SCBA. Self-contained breathing apparatus and full protective clothing must be worn in case of fire.
Unusual Fire & Explosion Hazards	Decomposition may produce fumes, smoke, oxides of carbon and hydrocarbons.
ACCIDENTAL RELEASE MEASURES	Do not allow to enter drains, sewers or watercourses., In the event of a spill or accidental release, notify relevant authorities in accordance with all applicable regulations., Collect and dispose of spillage as indicated in section 13 of the MSDS.

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6. ACCIDENTAL RELEASE MEASURES

Safety Advice	Wear appropriate personal protective equipment.
Spill Cleanup Methods	This material is a concentrated colorant. Do not allow material to enter soil or surface water. Dam and absorb spillage with sand, sawdust or other absorbent. In case of spills, beware of slippery floors and surfaces. Report spills as required to appropriate authorities.

7. HANDLING AND STORAGE

Handling	No specific hygiene procedures noted, but good personal hygiene practices are always advisable, especially when working with chemicals. Wash promptly with soap and water if skin becomes contaminated. Practice good housekeeping. Provide adequate ventilation if fumes or vapors are generated. Avoid prolonged contact with skin or eyes.
Handling / Physical hazards	Store in a cool place but keep from freezing. Store at temperature below 50°C.
Storage Precautions	Store in a cool, dry place with adequate ventilation. Keep away from incompatible materials, open flames, and high temperatures. Keep containers tightly closed.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Appropriate engineering controls	No special requirements under ordinary conditions of use and with adequate ventilation.
Eye protection	Wear necessary protective equipment. Avoid contact with eyes and prolonged skin contact. Where contact with this material is likely, chemical goggles are recommended.
Skin and Body Protection	Wash promptly with soap and water if skin becomes contaminated. Wear protective gloves to minimize skin contamination. When prolonged or frequently repeated contact could occur, use protective clothing impervious to this material.
Personal protection	Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.
Respiratory Protection	No protection is ordinarily required under normal conditions of use and with

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adequate ventilation.

9. PHYSICAL AND CHEMICAL PROPERTIES

Color	Dark blue
Odor	Slight Sweet
Specific Gravity	1.07
Volatiles	38 %
Solubility (in Water)	Completely Soluble
Boiling Point	102 °C
Melting/Freezing Point	0 °C

10. STABILITY AND REACTIVITY

Conditions to avoid	No special precautions are necessary beyond normal good hygiene practices. See Section 8 of the MSDS for additional personal protection advice when handling this product.
Hazardous Polymerization	Hazardous polymerization will not occur.
Hazardous decomposition products	Decomposition will not occur if handled and stored properly.

11. TOXICOLOGICAL INFORMATION

No data available.

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12. ECOLOGICAL INFORMATION

Acute Fish Toxicity

Species: Bluegill Sunfish
Type: LC50
Result: > 10,000 mg/l

13. DISPOSAL CONSIDERATIONS

Disposal Recommendations

This material is a concentrated colorant. Avoid washing material into sewer systems without proper treatment and authorization by the treatment facility management. Dispose of waste at an appropriate treatment and disposal facility in accordance with applicable laws and regulations, and product characteristics at time of disposal. Recycle empty drums at an appropriate facility in accordance with current applicable laws and regulations, and product characteristics at time of disposal. Ensure drums are tightly sealed.

14. TRANSPORT INFORMATION

Department of Transportation (DOT)

Not regulated.

Sea (IMDG)

Not regulated.

Air (ICAO/IATA)

Not regulated.

15. REGULATORY INFORMATION

Additional information is available by request.

16. OTHER INFORMATION

The information contained in this Material Safety Data Sheet is furnished without warranty, expressed or implied, except that it is accurate to the best knowledge of Milliken Chemical.

SECTION 1 - PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: Christy's® Clear Primer
Christy's® Purple Primer

SYNONYMS:

PRODUCT USE: Solvent Cement for PVC Plastic Pipe/ CPVC Pipe

SUPPLIER and MANUFACTURER: Christy Enterprises, Inc.
655 East Ball Road, Anaheim, CA 92805-5910
Tel. 1-714-507-3300 (North America)
Tel. 1-714-507-3300 (International)

EMERGENCY: Transportation/Medical issues: Tel. 800.535.5053 INFOTRAC

SECTION 2 - HAZARDS IDENTIFICATION

GHS CLASSIFICATION:

Health	Environmental	Physical
Acute Toxicity: Category 4	Acute Toxicity: None Known	Flammable Liquid/Aerosol/Gas: Category 2
Skin Corrosion/Irritation: Category 3	Chronic Toxicity: None Known	
Carcinogenicity: Category 2		
Eye: Category 2A		

Signal Word: **DANGER**



WHMIS CLASSIFICATION: CONTROLLED PRODUCT
CLASS B, DIVISION 2 CLASS D, DIVISION 2B

Hazard Statements

H225 Highly flammable liquid and vapor
H302 Harmful if swallowed
H319 Causes serious eye irritation
H332 Harmful if inhaled
H335 May cause respiratory irritation
H336 May cause drowsiness or dizziness
H351 Suspected of causing cancer

Precautionary Statements (See Section 15 for all advisory and required precautions)

P201 Obtain special instructions before use.
P202 Do not handle until all safety precautions have been read and understood
P210 Keep away from heat, hot surfaces, open flames and other ignition sources. No smoking
P261 Avoid breathing fumes/gas/vapours
P264 Wash hands thoroughly after handling.
P270 Do not eat, drink or smoke when using this product.
P271 Use only outdoors or in a well-ventilated area.
P280 Wear protective gloves/ protective/ clothing/ eye protection/ face protection
P330 Rinse Mouth
P304 + P340 IF INHALED: remove person to fresh air and keep comfortable for breathing.
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes.
Remove contact lenses, if present and easy to do. Continue rinsing.
P301+P312 IF SWALLOWED: Call a POISON CENTER/ doctor if you feel unwell.
P308+P313 IF exposed or concerned: Get medical advice/attention
P403+P233 Store in a well-ventilated place. Keep container tightly closed.
P405 Store locked up
P501 Dispose of contents/container in accordance with local regulations.

SECTION 3 - COMPOSITION/INFORMATION ON INGREDIENTS

	CAS#	EINECS #	REACH		CONCENTRATION	
			Pre-registration Number		% by Weight	
Tetrahydrofuran (THF)** (Stabilized)	109-99-9	203-726-8	05-2116297729-22-0000		30-60	
Methyl Ethyl Ketone (MEK)*	78-93-3	201-159-0	05-2116297728-24-0000		5-20	
Cyclohexanone	108-94-1	203-631-1	05-2116297718-25-0000		5-15	
Acetone	67-64-1	200-662-2	05-2116297713-35-0000		20-40	

All of the constituents of this adhesive product are listed on the TSCA inventory of chemical substances maintained by the US EPA, or are exempt from that listing.
*This chemical is subject to the reporting requirements of Section 313 of the Emergency Planning and Community Right-to-Know Act of 1986 (40CFR372).

SECTION 4 - FIRST AID MEASURES

Contact with eyes: Flush eyes immediately with plenty of water for 15 minutes and seek medical advice immediately.
Skin contact: Remove contaminated clothing and shoes. Wash skin thoroughly with soap and water. If irritation develops, seek medical advice.
Inhalation: Remove to fresh air. If breathing is stopped, give artificial respiration. If breathing is difficult, give oxygen. Seek medical advice.
Ingestion: Rinse mouth with water. Give 1 or 2 glasses of water or milk to dilute. Do not induce vomiting. Seek medical advice immediately.

SECTION 5 - FIREFIGHTING MEASURES

Suitable Extinguishing Media:	Dry chemical powder, carbon dioxide gas, foam, Halon, water fog.	HMIS	NFPA	0-Minimal
Unsuitable Extinguishing Media:	Water spray or stream.	Health	2	1-Slight
Exposure Hazards:	Carbon monoxide, carbon dioxide, hydrogen chloride and smoke	Flammability	3	2-Moderate
Combustion Products:	Carbon monoxide, carbon dioxide, hydrogen chloride and smoke	Reactivity	1	3-Serious
Protection for Firefighters:	Self-contained breathing apparatus or full-face positive pressure airline masks.		1	4-Severe

SECTION 6 - ACCIDENTAL RELEASE MEASURES

Personal precautions: Keep away from heat, sparks and open flame.
Provide sufficient ventilation, use explosion-proof exhaust ventilation equipment or wear suitable respiratory protective equipment.
Prevent contact with skin or eyes (see section 8).

Environmental Precautions: Prevent product or liquids contaminated with product from entering sewers, drains, soil or open water course.

Methods for Cleaning up: Clean up with sand or other inert absorbent material. Transfer to a closable metal container

Materials not to be used for clean up: Aluminum or plastic containers

SECTION 7 - HANDLING AND STORAGE

Handling: Avoid breathing of vapor, avoid contact with eyes, skin and clothing.
Keep away from ignition sources, use only electrically grounded handling equipment and ensure adequate ventilation/fume exhaust hoods.
Do not eat, drink or smoke while handling.

Storage: Store in ventilated room or shade below 27°C (80°F) and away from direct sunlight.
Keep away from ignition sources and incompatible materials: caustics, ammonia, inorganic acids, chlorinated compounds, strong oxidizers and isocyanates.
Follow all precautionary information on container label, product bulletins and solvent cementing literature.

SECTION 8 - PRECAUTIONS TO CONTROL EXPOSURE / PERSONAL PROTECTION

EXPOSURE LIMITS:	Component	ACGIH TLV	ACGIH STEL	OSHA PEL	OSHA STEL:	
	Tetrahydrofuran (THF) #/##	50 ppm skin	100 ppm	200 ppm	250 ppm	# Mfg. Recommended Allowable Exposure Limit (AEL): 25 ppm ## Mfg. Recommended STEL: 75 ppm
	Methyl Ethyl Ketone (MEK)	200 ppm	300 ppm	200 ppm	300 ppm	
	Cyclohexanone	20 ppm skin		50 ppm		
	Acetone	500 ppm skin	750 ppm	750 ppm	1000 ppm	

Engineering Controls: If ventilated cabinet, enclosure or fume hood is necessary, average airflow should be at least 100 FPM (50.8 cm/sec).

Monitoring: Maintain breathing zone airborne concentrations below exposure limits.

Personal Protective Equipment (PPE):

Eye Protection: Avoid contact with eyes, wear splash proof chemical goggles, face shield, safety glasses (spectacles) with brow guards and side shields, etc. as may be appropriate for the exposure.

Skin Protection: Prevent contact with the skin as much as possible. Polyethylene or PVA coated rubber gloves should be used for frequent immersion. Use of latex/nitrile surgical gloves or solvent-resistant barrier cream should provide adequate protection when normal adhesive application practices and procedures are used for making structural bonds.

Respiratory Protection: Prevent inhalation of the solvents. Use in a well-ventilated room. Open doors and/or windows to ensure airflow and air changes. Use local exhaust ventilation to remove airborne contaminants from employee breathing zone and to keep contaminants below levels listed above. With normal use, the Exposure Limit Value will not usually be reached. When limits approached, use respiratory protection equipment.

SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES

Appearance: Clear or Purple, thin liquid
Odor: Ethereal, similar to Acetone
P.H. Not Applicable
Melting/Freezing Point: -95°C (-139°F) Based on first freezing component: Acetone
Boiling Point: 57°C (133°F) Based on first boiling component: Acetone
Flash Point: -14°C (7°F) T.C.C. based on THF
Specific Gravity @23°C ± 2° (73°F ± 3.6°) Typical 0.844 ± 0.01
Solubility: Solvent portion completely soluble in water.
Partition Coefficient n-octanol/water: Not Available
Auto-ignition Temperature: 321°C (609.8°F); THF
Decomposition Temperature: Not Applicable
VOC Content: When applied as directed, per SCAQMD Rule 1168, Test Method 316A, VOC content is: ≤ 550 g/l.
Odor Threshold: N/D
Boiling Range: 57°C (133°F) to 67°C (151°F)
Evaporation Rate: 6-11 (BUAC = 1)
Flammability: Category I
Flammability Limits: LEL: 2% UEL: 11.8%
Vapor Pressure: 190 mm Hg @ 20°C (68°F): Acetone
Vapor Density: 2.00 (Air = 1)
Other Data: Viscosity: Water Thin

SECTION 10 - STABILITY AND REACTIVITY

Stability: Stable
Hazardous decomposition products: None in normal use. When forced to burn, this product gives off carbon monoxide (CO), carbon dioxide (CO2), hydrogen chloride (HCl) and smoke.
Conditions to avoid: Keep away from heat, sparks, open flame and other ignition sources.
Incompatible Materials: Caustics, ammonia, inorganic acids, chlorinated compounds, strong oxidizers and isocyanates.

SECTION 11 - TOXICOLOGICAL INFORMATION

Likely Routes of Exposure: Inhalation, Eye and Skin Contact
Acute symptoms and effects:
Inhalation: Severe overexposure may result in nausea, dizziness, headache. Can cause drowsiness, irritation of eyes and nasal passages.
Eye Contact: Vapors slightly uncomfortable. Overexposure may result in severe eye injury with corneal or conjunctival inflammation on contact with the liquid.
Skin Contact: Liquid contact may remove natural skin oils resulting in skin irritation. Dermatitis may occur with prolonged contact.
Ingestion: May cause nausea, vomiting, diarrhea and mental sluggishness.
Chronic (long-term) effects: None known to humans
Carcinogenicity:
Tetrahydrofuran (109-99-9)
ACGIH: A3- Confirmed Animal Carcinogen with Unknown Relevance to Humans
Cyclohexanone (108-94-1)
ACGIH: A3- Confirmed Animal Carcinogen with Unknown Relevance to Humans
Toxicity:
LD50 LC50
Tetrahydrofuran (THF) Oral: 2880 mg/kg (rat) Inhalation 3 hrs. 21,000 PPM (rat)
Methyl Ethyl Ketone (MEK) Oral: 3.98 g/kg (rat), Dermal: 8-10 mg/kg (rabbit) Inhalation 4 hrs. 4,000 PPM (rat)
Cyclohexanone Oral: 1900 mg/kg (rat), Dermal: 1.0 g/kg (rabbit) Inhalation LCLO, 4 hrs, 2,000 PPM (rat)
Acetone Oral: 9.75 g/kg (rat), Dermal: 20 g/kg (rabbit) Inhalation LCLO, 4 hrs, 16,000 PPM (rat)

Reproductive Effects	Teratogenicity	Mutagenicity	Embryotoxicity	Sensitization to Product	Synergistic Products
May cause embryofetal toxicity	Not Applicable	Not Available	Not Applicable	Not Applicable	Not Available

SECTION 12 - ECOLOGICAL INFORMATION

Ecotoxicity: Category IV
Mobility: In normal use, emission of volatile organic compounds (VOC's) to the air takes place. Typically at a rate of ≤ 550 Grams/Liter.
Minimal other adverse effects include possible ground water contamination from release to soil, sewers, drains or water course.
Degradability: Biodegradable
Bioaccumulation: Minimal to none.

SECTION 13 - WASTE DISPOSAL CONSIDERATIONS

Follow local and national regulations. Consult disposal expert. Can be disposed of by controlled incineration. May be allowed to dry and disposed of as trash.
Excessive quantities should not be permitted to enter drains, sewers or water courses. Empty containers should be air dried before disposing.

SECTION 14 - TRANSPORT INFORMATION

DOT, IATA, ADR, IMO/MDG SHIPPING INFORMATION
Proper Shipping Name: Flammable Liquid, n.o.s. DOT/MDG EXCEPTION: Case quantities of cement in containers of less than one liter may be shipped as LIMITED QUANTITY when properly labeled and marked.
Hazard Class: 3 (Tetrahydrofuran, Acetone)
Secondary Risk: None ICAO/IATA May be shipped by air as CONSUMER COMMODITY, ID 8000 when properly packaged, labeled and marked.
Identification Number: UN 1993
Packing Group: II
Label Required: Flammable Liquid
Marine Pollutant: NO
TDG INFORMATION
TDG CLASS: FLAMMABLE LIQUID 3
SHIPPING NAME: FLAMMABLE LIQUID, n.o.s. (Tetrahydrofuran)
UN NUMBER: 1993, PG II

SECTION 15 - REGULATORY INFORMATION

Precautionary Label Information: Highly Flammable, Irritant
Symbols: F, Xi
Risk Phrases: R-11 Highly Flammable
R-20 Harmful by inhalation
R-21 Harmful in contact with skin.
R-22 Harmful if swallowed.
Safety Phrases: S-2 Keep out of reach of children.
S-7 Keep container tightly closed when not in use.
S-9 Keep container in a well-ventilated place.
S-15/16 Keep away from heat and sources of ignition. No smoking.
S-23 Do not breathe vapor.
Ingredient Listings: USA TSCA, Europe EINECS, Canada DSL, Australia AICS, Korea ECL/TCCL, Japan MITI (ENCS)
R-36/37/38 Irritating to eyes, respiratory system and skin.
R67 Vapours may cause drowsiness and dizziness
S-24/25 Avoid contact with skin and eyes.
S-29 Do not empty into drains.
S-37 Wear suitable gloves.
S-45 If seeking medical advice show physician label or SDS.
S-46 Use only in well ventilated areas.

SECTION 16 - OTHER INFORMATION

Specification Information:
Department issuing data sheet: Environmental Health & Safety
e-mail address: <EHSinfo@tchristy.com>
All ingredients are compliant with the requirements of the European Directive on RoHS (Restriction of Hazardous Substances).
Training necessary: Yes, training in practices and procedures contained in product literature.
Reissue date / reason for reissue: MAR 2015/ Updated GHS Information
Intended Use of Product: Adhesive welding primer for cementing PVC and CPVC plastic pipe and fittings

This product is intended for use by skilled individuals at their own risk. The information contained herein is based on data considered accurate based on current state of knowledge and experience. However, no warranty is expressed or implied regarding the accuracy of this data or the results to be obtained from the use thereof.



SAFETY DATA SHEET S.D.S.

I – PRODUCT IDENTIFICATION

TRADE NAME (as labeled) **EZ WET SOIL PENETRANT 80%**

MANUFACTURER’S NAME GROW MORE, INC.
15600 New Century Drive
Gardena, CA 90248
Tel. (310) 515-1700
Fax (310) 515-4937

DATE PREPARED/REVISED April 2, 2014

NAME OF PREPARER H. Langheim

II – COMPOSITION/INFORMATION ON INGREDIENTS

HAZARDOUS INGREDIENTS

CHEMICAL NAME	CAS. No.	ACGIH TLV	OSHA PEL	OTHER
Peg – 9 NonPhenyl Ether	127087-87-0	1 ppm		

III – HAZARD IDENTIFICATION

EMERGENCY OVERVIEW

CAUTION! May cause redness and slight irritation. Repeated contact may cause slight irritation. Possible abdominal pain and nausea.

POTENTIAL HEALTH EFFECTS

EYES – Severely irritating to eyes.

SKIN – Slightly irritating to skin.

INHALATION – Slightly irritating respiratory mucous membranes.

SWALLOWED – Possible abdominal pain and nausea.

OSHA/GNS STATUS – Not considered hazardous by the OSHA Hazard Communication Standard

SIGNAL WORD – Caution

HAZARD STATEMENT – No known significant effects or critical hazard

SAFETY DATA SHEET EZ WET SOIL PENETRANT 80%

IV – FIRST AID MEASURES

EYE CONTACT - Wash thoroughly with water for at least 15 minutes. Hold eyelids apart during flushing. Send patient immediately to physician.

SKIN CONTACT - Wipe excess material with dry cloth, while removing contaminated clothing and shoes with large amounts of water and soap.

INHALED - Remove from exposure. Allow fresh air. Treat symptomatically.

SWALLOWED - Rinse mouth. Seek medical assistance. Do not induce vomiting or give anything by mouth to an unconscious person.

V – FIRE-FIGHTING MEASURES

SPECIAL FIREFIGHTING PROCEDURE - Must wear MSHA/NIOSH approved self-contained breathing Apparatus. Decompose to Carbon Dioxide, Carbon Monoxide.

UNUSUAL FIRE & EXPLOSION HAZARD - Products of combustion are toxic. Explosive mixtures form air.

CONDITIONS TO AVOID – Keep away from heat, sparks, open flames, hot surface, non-smoking.

Fire extinguishing materials:

<input checked="" type="checkbox"/> Water spray	<input checked="" type="checkbox"/> Carbon Dioxide
<input checked="" type="checkbox"/> Foam	<input checked="" type="checkbox"/> Dry Chemical

VI - ACCIDENTAL RELEASE MEASURES

SPILL RESPONSE PROCEDURE (Include employee protection measures):

Caution! Wear appropriate protective equipment MSHA/NIOSH approved respirator where mist or vapors of unknown concentration may be generated.

PREPARING WASTES FOR DISPOSAL (Container types, neutralization, etc.)

Dike and contain spill with inert material (sand, soil, etc. and transfer the liquid & solid separately to container for recovery or disposal. Keep spill out of sewers and open bodies of water. Dispose in compliance with all Federal State and local laws and regulations. Incineration is the preferred method.

VII - HANDLING AND STORAGE

To maintain product quality, store in a cool, dry, well ventilated place, do not store in heat or direct sunlight. Use good housekeeping hygienic practices such as washing hands with soap after handling. Keep out of reach of children.

VIII - EXPOSURE CONTROLS/PERSONAL PROTECTION

VENTILATION – Local exhaust.

ENGINEERING CONTROLS – N/A

RESPIRATORY PROTECTION – Where mist or vapors are generated by the process, MSHA/NIOSH approved respirator is advised in the absence of proper environmental control.

EYE PROTECTION – Safety glasses or goggles where there is a potential eye contact.

SKIN PROTECTION – Wear protective work gown, rubber or plastic gloves to prevent irritation.

IX - PHYSICAL AND CHEMICAL PROPERTIES

GENERAL INFORMATION

APPEARANCE – Dark brown liquid

ODOR – None

BOILING POINT OR RANGE °F – N/A

MELTING POINT OR RANGE °F – N/A

FLAMMABILITY – non-flammable

EXPOLOSIVE PROPERTIES – non-explosive

VAPOR PRESSURE: N/A

pH – 7.36

SPECIFIC GRAVITY – 1.14 g/cm³ (9.38 lbs. /gal)

EVAPORATION RATE (BUTYLACETATE=1) - 0

DECOMPOSITION TEMPERATURE – N/A

MOLECULAR WEIGHT – N/A

X - STABILITY AND REACTIVITY

STABILITY - Stable under normal conditions of use

CONDITIONS TO AVOID - N/A

INCOMPATIBILITY - None known to this time

HAZARDOUS DECOMPOSITION PRODUCTS (INCLUDING COMBUSTION PRODUCTS) – Decompose to Carbon Dioxide, and Carbon Monoxide

HAZARDOUS POLYMERIZATION – will not occur

XI – TOXICOLOGICAL INFORMATION

ACUTE ORAL TOXICITY – YES

ACUTE INHALATION TOXICITY – YES

ACUTE DERMAL IRRITATION – YES

EYE IRRITATION – acute

SENSITIZATION – none

CHRONIC TOXICITY – YES

XII – ECOLOGICAL INFORMATION

ECOTOXICITY EFFECTS

ACUTE TOXICITY – none known

MOBILITY – not applicable

PERSISTENCE AND DEGRADABILITY – none known

Bioaccumulative potential – is not known to accumulate

XIII – TRANSPORT INFORMATION

U.S.DEPARTMENT OF TRANSPORTATION

Not regulated by DOT

XIV - REGULATORY INFORMATION

CERCLA REPORTABLE QUANTITY (40 CFR117, 302)

SARA TITLE 1

SECTION 302 (40 CFR 355)

SECTION 311/312 (40 CFR 370)

1 Immediate (Acute) Health Effect – Yes

2 Delayed (Chronic) Health Effect – NO

3 Fire Hazard – NO

4 Sudden Release of Pressure Hazard – NO

5 Reactivity Hazard – NO

SECTION 313 (40 CFR 372) – Please refer to any other federal, state and local regulations.

XV - OTHER INFORMATION

KEEP OUT OF REACH OF CHILDREN

Although the information and recommendations set forth in this sheet are believed to be correct as of the date hereof, Grow More, Inc. makes no representation as to the completeness or accuracy of such information and recommendations. Grow More, Inc. shall in no event be responsible for any damages of whatsoever nature or indirectly resulting from the publication or use of or reliance upon such information and recommendations. You are encouraged to advise anyone working with or exposed to such products of the information contained herein.

No warranty either expressed or implied of merchantability or fitness or of any other nature with respect to the product or to the information a recommendations herein made hereunder.



MATERIAL SAFETY DATA SHEET

MARK-IT BLUE

Page 1 of 4

Issue Date: 1/14

SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

Chemical Product

MARK-IT BLUE

Common Name: Spray solution colorant, blue.

Chemical Description: Triphenylmethane blue dye, aqueous solution.

TSCA/CAS No.: This product is a mixture — there is no specific CAS No.

Manufactured For

Lawn and Garden Products, Inc.

P. O. Box 35000

Fresno, CA 93745-5000

Emergency Phone Numbers

Emergency Telephone: DAYS: (559) 499-2100 EVES.: (559) 994-9144

CHEMTREC (24-Hour Emergency Number): (800) 424-9300

EPA National Response Center: (800) 424-8802

SECTION 2. HAZARDOUS INGREDIENTS

CHEMICAL	CAS NO.	%	TLV OR PEL	RQ (lbs)
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None.

SECTION 3. EMERGENCY/HAZARDS OVERVIEW

Dark, blue liquid with no odor. Flammable hydrogen gas may be liberated from contact with some metals. Extinguish all nearby sources of ignition/spark. Not D.O.T. regulated.

HEALTH: 1 REACTIVITY: 0 FLAMMABILITY: 0 ENVIRONMENT: 0

(0 = Insignificant 1 = Slight 2 = Moderate 3 = High 4 = Extreme)

SECTION 4. FIRST AID

Eyes: Flush immediately with water for at least 15 minutes. Seek immediate medical attention.

Skin: Wash thoroughly with soap and water. Remove contaminated clothing and wash before reuse. See a physician if skin becomes irritated.

Ingestion: If conscious and alert, drink water or milk to dilute, then induce vomiting. Never give fluids or induce vomiting if victim is unconscious. Call a physician or Poison Control Center immediately.

Inhalation: Move to fresh air. If breathing becomes difficult, call a physician.

SECTION 5.	FIRE AND EXPLOSION HAZARDS
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Flash Point:	Not available.
Test Method:	Not available.
LEL Flammable Limits:	Not pertinent.
UEL Flammable Limits:	Not pertinent.
Autoignition Temperature:	Not pertinent.
Flammability Classification:	None.
Known Hazardous Products of Combustion:	None.
Properties that Initiate/Contribute to Intensity of Fire:	None.
Potential For Dust Explosion:	None.
Reactions that Release Flammable Gases or Vapors:	Flammable hydrogen gas may be liberated from contact with some metals.
Potential For Release of Flammable Vapors:	None.
Unusual Fire & Explosion Hazards:	Extinguish all nearby sources of ignition/spark.
Extinguishing Media:	Dry powder or CO ₂ .
Special Firefighting Procedures:	Wear positive pressure, self-contained breathing apparatus and goggles. Avoid smoke inhalation. Contain any liquid runoff.

SECTION 6.	SPILLS AND LEAKS
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Containment:	Prevent product spillage from entering drinking water supplies or streams.
Clean Up:	Collect liquid or absorb onto absorbent material and package for disposal.
Evacuation:	Not necessary.

SECTION 7.	STORAGE AND HANDLING
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Storage:	Store in plastic or stainless steel container in a cool, well-ventilated, dry place at temperatures above 40°F. Avoid contact with active metals. Do not store near food or feeds. Do not stack pallets more than two (2) high.
Transfer Equipment:	Transfer product using chemical-resistant plastic or stainless steel tanks, pumps, valves, etc.
Work/Hygienic Practices:	Keep out of reach of children. Avoid contact with eyes, skin and clothing. Avoid inhalation of spray mists. Wash thoroughly with soap and water after handling.

SECTION 8.	PERSONAL PROTECTIVE EQUIPMENT
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Eyes:	Chemical dust/splash goggles or full-face shield to prevent eye contact. As a general rule, do not wear contact lenses when handling.
Skin:	Impervious gloves and clothes.
Respiratory:	Not normally needed. If use generates an aerosol mist or respiratory irritation, use NIOSH-approved dust/mist respirator (such as 3M #8710).
Ventilation:	Recommended but no TLV established.

SECTION 9. PHYSICAL AND CHEMICAL DATA

Appearance:	Dark blue liquid.
Odor:	None.
pH:	7.0
Vapor Pressure:	Not available.
Vapor Density (Air = 1):	> 1.0
Boiling Point:	98.9°C (210°F)
Freezing Point:	Not available.
Water Solubility:	Soluble.
Density:	8.84 lbs./gal.
Evaporation Rate:	Not available.
Viscosity:	Not available.
% Volatile:	Not available.
Octanol/Water Partition Coefficient:	Not available.
Saturated Vapor Concentration:	Not available.

SECTION 10. STABILITY AND REACTIVITY

Stability:	Stable.
Conditions To Avoid:	Contact with active metals.
Incompatibility:	Not available.
Hazardous Decomposition Products:	May liberate carbon monoxide, carbon dioxide or, if in contact with active metals, hydrogen gas.
Hazardous Polymerization:	Will not occur.

SECTION 11. POTENTIAL HEALTH EFFECTSAcute Effects:

Eyes:	Irritant. Causes redness, drying and cracking.
Skin:	Irritant, especially from prolonged exposure. Causes redness, drying and cracking.
Ingestion:	May cause stomach cramps and/or nausea.
Inhalation:	None expected but aerosol mist may cause mild irritation of nasal mucous membranes. May also cause coughing.

Subchronic Effects: None known.

Chronic Effects: None known.

SECTION 12. ECOLOGICAL INFORMATION

Algal/Lemna Growth Inhibition:	Not known.
Toxicity to Fish and Invertebrates:	Not known.
Toxicity to Plants:	Not known.
Toxicity in Birds:	Not known.

SECTION 13. DISPOSAL

Do not contaminate lakes, streams, ponds, estuaries, oceans or other waters by discharge of waste effluents or equipment washwaters. Dispose of waste effluents according to state and local regulations. Also, chemical additions or other alterations of this product may invalidate any disposal information in this MSDS. Therefore, consult local waste regulators for proper disposal. Do not discharge.

SECTION 14. TRANSPORTATION

D.O.T.:	Not D.O.T. Regulated.
Other Shipping Description:	Dyes or Colors, Liquid.
	NMFC Item 44380, LTL Class 100

SECTION 15. REGULATORY INFORMATION

CERCLA: None.
SARA TITLE III, Section 313 Toxic Chemicals: None.
PROPOSITION 65 (CA): None.

SECTION 16. OTHER

All information appearing in this document was based on data provided by third party sources and was compiled to comply with the Federal Hazard Communication Standard and the California Hazardous Substances Information and Training Act. The information is believed to be accurate as of the preparation date, but is not warranted as being the final authority in the use of this product. This information does not purport to be legal or medical advice.

MATERIAL SAFETY DATA SHEET

MONTEREY NATURE'S OWN SPRAY HELPER Page 1 of 4

Issue Date: 10/99

SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

Chemical Product

MONTEREY NATURE'S OWN SPRAY HELPER

CA Reg. No. 54705-50002-AA

Common Name: Spreader/sticker surfactant (Adjuvant).

Chemical Description: Liquid mixture of nonionic surfactant/ vegetable oil.

TSCA/CAS No.: This product is a mixture – there is no specific CAS No.

Manufactured For

Lawn & Garden Products, Inc.

P. O. Box 35000

Fresno, CA 93745-5000

Emergency Phone Numbers

Emergency Telephone: DAYS: (559) 499-2100 EVES.: (559) 435-2163

CHEMTREC (24-Hour Emergency Number): (800) 424-9300

EPA National Response Center: (800) 424-8802

SECTION 2. HAZARDOUS INGREDIENTS

CHEMICAL	CAS NO.	%	TLV OR PEL	RQ (lbs)
POE (9) Nonylphenols	26027-38-3, 9016-45-9	16.0	N.A.*	N.P.*
Isopropyl alcohol	67-63-0	3.0	400 ppm (PEL)	N.P.

* N.A. - Not Available.

* N.P. - Not Pertinent.

SECTION 3. EMERGENCY/HAZARDS OVERVIEW

Thick amber liquid with vegetable-like odor. Avoid contact with strong acids or oxidizing agents, or materials reactive with hydroxyl compounds. Burning may result in formation of carbon oxides. D.O.T. flammable liquid.

HEALTH: 1 REACTIVITY: 0 FLAMMABILITY: 1 ENVIRONMENT: 1
(0=Insignificant 1=Slight 2=Moderate 3=High 4=Extreme)

SECTION 4. FIRST AID

- Eyes: Flush immediately with water for at least 15 minutes. Do not rub eyes. Get immediate medical attention.
- Skin: Wash thoroughly with soap and water. Remove contaminated clothing and wash before reuse. See a physician if skin becomes irritated.
- Ingestion: If conscious and alert, administer water or milk for dilution. If vomiting occurs spontaneously, keep victim's head below his hips to prevent inhalation of vomitus into lungs. Contact physician or Poison Control Center immediately.
- Inhalation: Move to fresh air. If breathing becomes difficult, call a physician.

SECTION 5. FIRE AND EXPLOSION HAZARDS

Flash Point:	85°F.
Test Method:	ASTM-D93
LEL Flammable Limits:	Not pertinent.
UEL Flammable Limits:	Not pertinent.
Autoignition Temperature:	Not pertinent.
Flammability Classification:	Flammable.
Known Hazardous Products of Combustion:	None.
Properties that Initiate/Contribute to Intensity of Fire:	None.
Potential For Dust Explosion:	None.
Reactions that Release Flammable Gases or Vapors:	Not known.
Potential For Release of Flammable Vapors:	None.
Unusual Fire & Explosion Hazards:	None.
Extinguishing Media:	Water, foam, CO ₂ , dry chemical.
Special Firefighting Procedures:	Wear positive pressure, self-contained breathing apparatus and goggles. Avoid smoke inhalation. Contain any liquid runoff.

SECTION 6. SPILLS AND LEAKS

Containment: Prevent product spillage from entering drinking water supplies or streams.
 Clean Up: Collect liquid or absorb onto absorbent material and package for disposal.
 Evacuation: Not necessary.

SECTION 7. STORAGE AND HANDLING

Storage: Store in plastic or stainless steel container in a cool, well-ventilated, dry place at temperatures above 40°F. Keep away from strong acids and/or oxidizing agents. Do not store near food or feeds. Do not stack pallets more than two (2) high.
 Transfer Equipment: Transfer product using chemical-resistant plastic or stainless steel tanks, pumps, valves, etc.
 Work/Hygienic Practices: Keep out of reach of children. Avoid contact with eyes, skin and clothing. Avoid inhalation of spray mists. Wash thoroughly with water after handling.

SECTION 8. PERSONAL PROTECTIVE EQUIPMENT

Eyes: Chemical dust/splash goggles or full-face shield to prevent eye contact. As a general rule, do not wear contact lenses when handling.
 Skin: Impervious gloves and clothes.
 Respiratory: Not normally needed. If use generates an aerosol mist or respiratory irritation, use NIOSH-approved dust/mist respirator (such as 3M #8710).
 Ventilation: Recommended but no TLV established.

SECTION 9. PHYSICAL AND CHEMICAL DATA

Appearance: Thick amber liquid.
 Odor: Vegetable oil-like.
 pH: 7.0
 Vapor Pressure: 0.70 (psi)
 Vapor Density (Air = 1): <1.0
 Boiling Point: 78.9°C (174°F)
 Freezing Point: Not available.
 Water Solubility: Emulsifiable.
 Density: 7.84 lbs./gal.
 Evaporation Rate: Not available.
 Viscosity: Not available.
 % Volatile: None.
 Octanol/Water Partition Coefficient: Not available.
 Saturated Vapor Concentration: Not available.

SECTION 10. STABILITY AND REACTIVITY

Stability: Stable.
 Conditions To Avoid: Avoid contact with strong acids, oxidizing agents or materials reactive with hydroxyl compounds.
 Incompatibility: Not available.
 Hazardous Decomposition Products: Burning may result in formation of carbon oxides.
 Hazardous Polymerization: Will not occur.

SECTION 11. POTENTIAL HEALTH EFFECTS

Acute Effects:
 Eyes: Mild irritant. May cause redness and/or burning.
 Skin: Mild irritant, especially from prolonged exposure. Causes redness, drying and cracking.
 Ingestion: LD₅₀ (Rat) > 5000 mg/kg.
 Inhalation: None expected but aerosol mist may cause mild irritation of nasal mucous membranes.
Subchronic Effects: None known.
Chronic Effects: None known.

SECTION 12. ECOLOGICAL INFORMATION

Algal/Lemna Growth Inhibition: Not known.
 Toxicity to Fish and Invertebrates: Not known.
 Toxicity to Plants: Not known.
 Toxicity in Birds: Not known.

SECTION 13. DISPOSAL

Do not contaminate lakes, streams, ponds, estuaries, oceans or other waters by discharge of waste effluents or equipment washwaters. Dispose of waste effluents according to state and local regulations. Also, chemical additions or other alterations of this product may invalidate any disposal information in this MSDS. Therefore, consult local waste regulators for proper disposal. Do not discharge.

SECTION 14. TRANSPORTATION

<p>D.O.T. Proper Shipping Description: 12/1 Pts.; 4/1 Gal.-</p> <p>Other Shipping Information:</p>	<p>Flammable Liquid, N.O.S. (Isopropanol), 3, UN 1993, PG III, Ltd. Qty. (No Hazard Labels/Placards Required) ERG #128.</p> <p>Adhesives, Adjuvants, Spreaders or Stickers, Liquid. NMFC Item 4612, LTL Class 60</p>
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SECTION 15. REGULATORY INFORMATION

CERCLA: None.
SARA TITLE III, Section 313 Toxic Chemicals: None.
PROPOSITION 65 (CA): None.

SECTION 16. OTHER

All information appearing in this document was based on data provided by third party sources and was compiled to comply with the Federal Hazard Communication Standard and the California Hazardous Substances Information and Training Act. The information is believed to be accurate as of the preparation date, but is not warranted as being the final authority in the use of this product. This information does not purport to be legal or medical advice.

Summit® Year-Round® Spray Oil Ready-to-Use (vers. 04/29/2015)

Safety Data Sheet

According to Federal Register / Vol. 77, No. 58 / Monday March 26 2012 / Rules and Regulations

1.1 Product Identifier

Product name: Summit® Year-Round® Spray Oil Ready-to-Use

USEPA Registration No.: 6218-78

1.2 Relevant identified uses of the substance or mixture and uses advised against

1.3 Details of the Supplier of the safety data sheet

Summit Chemical Company

235 S. Kresson Street

Baltimore, MD 21224-2616

800-227-8664

Summitchemical.com

US EPA Establishment No. 6218-MD-2

1.4 Emergency Telephone Number

CHEMTREC 800-262-8200

2.1 Classification of Substance or Mixture

Classification (GHS-US)

Not Classified

2.2 Label Elements

GHS-US Labeling

No labeling applicable

2.3 Other Hazards

No additional information available

2.4 Unknown Acute Toxicity

No Data Available

MIXTURE

NAME	PRODUCT IDENTIFIER	%	CLASSIFICATION
Refined Mineral Oil	CAS No. 64742-55-8	1.00	Not classified

SECTION 4 - FIRST AID MEASURES

4.1 Description of First Aid Measures

- First Aid Measures General** : Never Give anything by mouth to an unconscious person. If You feel unwell, seek medical advice (show the label where possible)
- First Aid Measures after Inhalation** : Assure fresh air breathing. Allow the victim to rest.
- First Aid measures after skin contact** : Remove affected clothing and wash all exposed skin area with Mild soap and water, followed by warm water rinse.
- First aid measures after skin contact** : Rinse immediately with plenty of water. Obtain medical attention if pain, blinking or redness persist.
- First aid measures after ingestion** : Rinse mouth. Do NOT induce vomiting. Obtain emergency medical attention

4.2 Most Important symptoms and effects, both acute and delayed

- Symptoms/injuries** : Not expected to present a significant hazard under anticipated conditions of normal use.

4.3 Indication of any immediate medical attention and special treatment needed

No additional information available

SECTION 5 - FIRE FIGHTING MEASURES

5.1 Extinguishing media

- Suitable Extinguishing Media** : Foam. Dry powder. Carbon Dioxide. Water Spray. Sand
- Unsuitable Extinguishing Media** : Do not use heavy water stream

5.2 Special Hazards Arising from the Substance or Mixture

No additional information available.

5.3 Advice For Firefighters

- Firefighting instructions** : Use water spray or fog for cooling exposed containers. Exercise caution when fighting any chemical fire. Avoid (reject) fire fighting water to enter environment.
- Protection during Firefighting** : Do not enter fire area without proper protective equipment, including respiratory protection.

SECTION 6 - ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, Protective Equipment and Emergency Procedures

- General Measures** : Isolate from fire, if possible, without unnecessary risk.

6.1.1 For Non-Emergency Personnel

- Emergency Procedures** : Evacuate unnecessary personnel.

6.1.2 For Emergency Responders

- Protective Equipment** : Equip Cleanup crew with proper protection
- Emergency Procedures** : Ventilate Area

6.2 Environmental Precautions

Prevent entry to sewers and public waters.

6.3 Methods and Material for Containment and Cleaning Up

See Heading 8. Exposure controls and personal protection

SECTION 7: HANDLING AND STORAGE

7.1 Precautions for Safe Handling

Precautions for Safe Handling

:Wash hands and other exposed areas with mild soap and water before eating, drinking, smoking tobacco, or chewing gum and when leaving work.

7.2 Conditions for Safe Storage, Including any Incompatibilities

Storage Conditions

:Keep only in the original container with original label in a cool, well ventilated place away from Children. Keep Container closed when not in use.

Incompatible Products

: Strong bases, acids.

Incompatible Materials

: Sources of Ignition

7.3 Specific End Use(s)

No additional information available.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control Parameters

Refined mineral oil (CAS No. 64742-55-8)		
USA ACGIH	ACGIH TWA (mg/m3)	5 mg/m3

8.2 Exposure Controls

Personal protective Equipment

: Avoid all unnecessary exposure.

Hand protection

: Wear protective gloves.

Eye Protection

: Chemical Goggles or safety glasses.

Respiratory protection

: Wear approved mask.

Other information

: When using do not eat, drink, or smoke.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on Basic Physical and Chemical Properties

Physical State

: Liquid

Color

: Cloudy to white.

Odor

: Mild

Odor Threshold

: No data available.

pH

: 6.5-7.5

Relative Evaporation rate (butyl acetate=1)

: No data available

Melting Point

: No data available

Freezing Point

: No data available

Boiling Point

: 200 degrees F

Flash Point : > 200 degrees F
 Self Ignition Temperature : 650 degrees F
 Decomposition Temperature : No data available
 Flammability (solid, gas) : No data available
 Vapor Pressure : No data available
 Relative vapor density.at 20 degrees C : No data available
 Relative density : 0.994
 Density : No data available
 Solubility : No data available

9.2 Other Information

No additional information available.



10.1 Reactivity

No additional information available.

10.2 Chemical Stability

Stable under normal conditions

10.3 Possibility of hazardous reactions

Not established

10.4 Conditions to Avoid

Heat. Extremely High or Low Temperatures

10.5 Incompatible Materials

Strong acids, Strong Bases

10.6 Hazardous Decomposition Products

Carbon Monoxide. Carbon Dioxide



11.1 Information on Toxicological Effects

Acute Toxicity : Not classified

Refined Mineral oil	
LD50 oral rat	> 5000 mg/kg (Rat)
LD50 dermal rabbit	> 2000 mg/kg (Rabbit)

Skin corrosion/irritation : Not classified
 pH 6.5-7.5
 Serious Eye damage/irritation : Not classified
 pH: 6.5-7.5
 Respiratory or skin sensitization : Not Classified
 Germ Cell Mutagenicity : Not Classified
 Carcinogenicity : Not Classified

Refined mineral oil (CAS No. 64742-55-8)	
IARC Group	3- Not Classifiable

Reproductive Toxicity : Not Classified
 Specific Target Organ Toxicity (Single Exposure) : Not Classified
 Specific Target Organ Toxicity (Repeated Exposure) : Not Classified
 Aspiration Hazard : Not Classified
 Potential Adverse Human Health Effects and Symptoms : Based on available date, the classification criteria are not met

12.1 Toxicity

No additional information available.

12.2 Persistence and Degradability

Summit® Year-Round® Spray Oil Ready-to-Use	
Persistence and Degradability	Not Established

Refined mineral oil (CAS No. 64742-55-8)	
Persistence and Degradability	Contains non readily biodegradable component(s)

12.3 Bioaccumulative Potential

Summit® Year-Round® Spray Oil Ready-to-Use	
Bioaccumulative Potential	Not established

Refined mineral oil (CAS No. 64742-55-8)	
Bioaccumulative Potential	No bioaccumulation data available.

12.4 Mobility in Soil

No additional information available

12.5 Other Adverse Effects

Other Information : Avoid release to the environment.

13.1 Waste Treatment Methods

Waste Disposal Recommendations :Dispose in a safe manner in accordance with local/national regulations.

Ecology – Waste Materials : Avoid Release into the environment

In accordance with DOT

Non dangerous good in sense of transport regulations

Additional Information

Other information : No supplementary information Available

ADR

Transport document description

Transport by Sea

No additional information available.

Air Transport

No additional information available.

This chemical is a product registered by the Environmental Protection Agency and is subject to certain labeling requirements under federal pesticide law. These requirements differ from the classification criteria and hazard information required for safety data sheets, and for workplace labels of non-pesticide chemicals. Following is the hazard information as required on the pesticide label.

CAUTION: KEEP OUT OF REACH OF CHILDREN

Causes moderate eye irritation.

15.1 US Federal Regulations

Summit® Year-Round® Spray Oil Ready-to-Use
--

Not listed on the United States TSCA (Toxic Substances Control Act) Inventory

Refined mineral oil (CAS No. 64742-55-8)
--

Not listed on the United States TSCA (Toxic Substances Control Act) Inventory

15.2 International Regulations

CANADA

No Additional Information Available

EU-Regulations

No Additional Information Available

Classification according to Regulation (EC) No. 1272/2008 [CLP]

Classification according to Directive 67/548/EEC or 1999/45/EC

Not classified

15.3 US State Regulations

Refined mineral oil (CAS No. 64742-55-8)
--

US – New Jersey – Right to Know Hazardous Substance List
--

Other Information

: None

SECTION 1 - PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: WELD-ON® 795™ Low VOC PVC Plastic Pipe Cement
PRODUCT USE: Low VOC Solvent Cement for PVC Plastic Pipe
SUPPLIER:
MANUFACTURER: IPS Corporation
 17109 South Main Street, Gardena, CA 90248-3127
 P.O. Box 379, Gardena, CA 90247-0379
 Tel. 1-310-898-3300
EMERGENCY: Transportation: CHEMTEL Tel. 800.255-3924, +1 813-248-0585 (International) **Medical:** CHEMTEL Tel. 800.255-3924, +1 813-248-0585 (International)

SECTION 2 - HAZARDS IDENTIFICATION

GHS CLASSIFICATION:

Health		Environmental		Physical	
Acute Toxicity:	Category 4	Acute Toxicity:	None Known	Flammable Liquid	Category 2
Skin Irritation:	Category 3	Chronic Toxicity:	None Known		
Skin Sensitization:	NO				
Eye:	Category 2				

GHS LABEL:



Signal Word:
Danger

WHMIS CLASSIFICATION: CLASS B, DIVISION 2
CLASS D, DIVISION 1B

Hazard Statements

H225: Highly flammable liquid and vapor
 H319: Causes serious eye irritation
 H335: May cause respiratory irritation
 H336: May cause drowsiness or dizziness
 H351: Suspected of causing cancer
 EUH019: May form explosive peroxides

Precautionary Statements

P210: Keep away from heat/sparks/open flames/hot surfaces – No smoking
 P261: Avoid breathing dust/fume/gas/mist/vapors/spray
 P280: Wear protective gloves/protective clothing/eye protection/face protection
 P337+P313: Get medical advice/attention
 P403+P233: Store in a well ventilated place. Keep container tightly closed
 P501: Dispose of contents/container in accordance with local regulation

SECTION 3 - COMPOSITION/INFORMATION ON INGREDIENTS

	CAS#	EINECS #	REACH		CONCENTRATION
			Pre-registration Number		% by Weight
Tetrahydrofuran (THF)	109-99-9	203-726-8	05-2116297729-22-0000		35 - 45
Methyl Ethyl Ketone (MEK)	78-93-3	201-159-0	05-2116297728-24-0000		5 - 15
Cyclohexanone	108-94-1	203-631-1	05-2116297718-25-0000		5 - 15
Acetone	67-64-1	200-662-2	05-2116297713-35-0000		5 - 15

All of the constituents of this adhesive product are listed on the TSCA inventory of chemical substances maintained by the US EPA, or are exempt from that listing.
 * Indicates this chemical is subject to the reporting requirements of Section 313 of the Emergency Planning and Community Right-to-Know Act of 1986 (40CFR372).
 # indicates that this chemical is found on Proposition 65's List of chemicals known to the State of California to cause cancer or reproductive toxicity.

SECTION 4 - FIRST AID MEASURES

Contact with eyes: Flush eyes immediately with plenty of water for 15 minutes and seek medical advice immediately.
Skin contact: Remove contaminated clothing and shoes. Wash skin thoroughly with soap and water. If irritation develops, seek medical advice.
Inhalation: Remove to fresh air. If breathing is stopped, give artificial respiration. If breathing is difficult, give oxygen. Seek medical advice.
Ingestion: Rinse mouth with water. Give 1 or 2 glasses of water or milk to dilute. Do not induce vomiting. Seek medical advice immediately.
Likely Routes of Exposure: Inhalation, Eye and Skin Contact
Acute symptoms and effects:
Inhalation: Severe overexposure may result in nausea, dizziness, headache. Can cause drowsiness, irritation of eyes and nasal passages.
Eye Contact: Vapors slightly uncomfortable. Overexposure may result in severe eye injury with corneal or conjunctival inflammation on contact with the liquid.
Skin Contact: Liquid contact may remove natural skin oils resulting in skin irritation. Dermatitis may occur with prolonged contact.
Ingestion: May cause nausea, vomiting, diarrhea and mental sluggishness.
Chronic (long-term) effects: Category 2 Carcinogen

SECTION 5 - FIREFIGHTING MEASURES

Suitable Extinguishing Media:	Dry chemical powder, carbon dioxide gas, foam, Halon, water fog.	HMIS	NFPA	0-Minimal
Unsuitable Extinguishing Media:	Water spray or stream.	Health	2	1-Slight
Exposure Hazards:	Inhalation and dermal contact	Flammability	3	2-Moderate
Combustion Products:	Oxides of carbon, hydrogen chloride and smoke	Reactivity	0	3-Serious
		PPE	B	4-Severe
Protection for Firefighters:	Self-contained breathing apparatus or full-face positive pressure airline masks.			

SECTION 6 - ACCIDENTAL RELEASE MEASURES

Personal precautions: Keep away from heat, sparks and open flame.
 Provide sufficient ventilation, use explosion-proof exhaust ventilation equipment or wear suitable respiratory protective equipment.
 Prevent contact with skin or eyes (see section 8).
Environmental Precautions: Prevent product or liquids contaminated with product from entering sewers, drains, soil or open water course.
Methods for Cleaning up: Clean up with sand or other inert absorbent material. Transfer to a closable steel vessel.
Materials not to be used for clean up: Aluminum or plastic containers

SECTION 7 - HANDLING AND STORAGE

Handling: Avoid breathing of vapor, avoid contact with eyes, skin and clothing.
 Keep away from ignition sources, use only electrically grounded handling equipment and ensure adequate ventilation/fume exhaust hoods.
 Do not eat, drink or smoke while handling.
Storage: Store in ventilated room or shade below 44°C (110°F) and away from direct sunlight.
 Keep away from ignition sources and incompatible materials: caustics, ammonia, inorganic acids, chlorinated compounds, strong oxidizers and isocyanates.
 Follow all precautionary information on container label, product bulletins and solvent cementing literature.

SECTION 8 - PRECAUTIONS TO CONTROL EXPOSURE / PERSONAL PROTECTION

EXPOSURE LIMITS:	Component	ACGIH TLV	ACGIH STEL	OSHA PEL	OSHA STEL	OSHA PEL-Ceiling	CAL/OSHA PEL	CAL/OSHA Ceiling	CAL/OSHA STEL
Methyl Ethyl Ketone (MEK)	200 ppm	300 ppm	200 ppm	N/E	N/E	200 ppm	N/E	300 ppm	
Cyclohexanone	20 ppm	50 ppm	50 ppm	N/E	N/E	25 ppm	N/E	N/E	
Acetone	500 ppm	750 ppm	1000 ppm	N/E	N/E	500 ppm	3000 ppm	750 ppm	

Engineering Controls: Use local exhaust as needed.
Monitoring: Maintain breathing zone airborne concentrations below exposure limits.
Personal Protective Equipment (PPE):
Eye Protection: Avoid contact with eyes, wear splash-proof chemical goggles, face shield, safety glasses (spectacles) with brow guards and side shields, etc. as may be appropriate for the exposure.
Skin Protection: Prevent contact with the skin as much as possible. Butyl rubber gloves should be used for frequent immersion.
 Use of solvent-resistant gloves or solvent-resistant barrier cream should provide adequate protection when normal adhesive application practices and procedures are used for making structural bonds.
Respiratory Protection: Prevent inhalation of the solvents. Use in a well-ventilated room. Open doors and/or windows to ensure airflow and air changes. Use local exhaust ventilation to remove airborne contaminants from employee breathing zone and to keep contaminants below levels listed above.
 With normal use, the Exposure Limit Value will not usually be reached. When limits approached, use respiratory protection equipment.



GHS SAFETY DATA SHEET

WELD-ON® 795™ Low VOC PVC Plastic Pipe Cement

Date Revised: APR 2015
Supersedes: NOV 2014

SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Blue or clear, medium syrupy liquid	Odor Threshold:	0.88 ppm (Cyclohexanone)
Odor:	Ketone	Boiling Range:	56°C (133°F) to 156°C (313°F)
pH:	Not Applicable	Evaporation Rate:	> 1.0 (BUAC = 1)
Melting/Freezing Point:	-108.5°C (-163.3°F) Based on first melting component: THF	Flammability:	Category 2
Boiling Point:	56°C (133°F) Based on first boiling component: Acetone	Flammability Limits:	LEL: 1.1% based on Cyclohexanone UEL: 12.8% based on Acetone
Flash Point:	-20°C (-4°F) TCC based on Acetone	Vapor Pressure:	190 mm Hg @ 20°C (68°F) Acetone
Specific Gravity:	0.94 @23°C (73°F)	Vapor Density:	>2.0 (Air = 1)
Solubility:	Solvent portion soluble in water. Resin portion separates out.	Other Data: Viscosity:	Medium bodied
Partition Coefficient n-octanol/water:	Not Available		
Auto-ignition Temperature:	321°C (610°F) based on THF		
Decomposition Temperature:	Not Applicable		
VOC Content:	When applied as directed, per SCAQMD Rule 1168, Test Method 316A, VOC content is: ≤ 510 g/l.		

SECTION 10 - STABILITY AND REACTIVITY

Stability:	Stable
Hazardous decomposition products:	None in normal use. When forced to burn, this product gives off oxides of carbon, hydrogen chloride and smoke.
Conditions to avoid:	Keep away from heat, sparks, open flame and other ignition sources.
Incompatible Materials:	Oxidizers, strong acids and bases, amines, ammonia

SECTION 11 - TOXICOLOGICAL INFORMATION

Toxicity:	LD50	LC50	Target Organs
Tetrahydrofuran (THF)	Oral: 2842 mg/kg (rat)	Inhalation 3 hrs. 21,000 mg/m ³ (rat)	STOT SE3
Methyl Ethyl Ketone (MEK)	Oral: 2737 mg/kg (rat), Dermal: 6480 mg/kg (rabbit)	Inhalation 8 hrs. 23,500 mg/m ³ (rat)	STOT SE3
Cyclohexanone	Oral: 1535 mg/kg (rat), Dermal: 948 mg/kg (rabbit)	Inhalation 4 hrs. 8,000 PPM (rat)	
Acetone	Oral: 5800 mg/kg (rat)	Inhalation 50,100 mg/m ³ (rat)	STOT SE3

Reproductive Effects	Teratogenicity	Mutagenicity	Embryotoxicity	Sensitization to Product	Synergistic Products
Not Established	Not Established	Not Established	Not Established	Not Established	Not Established

SECTION 12 - ECOLOGICAL INFORMATION

Ecotoxicity:	None Known
Mobility:	In normal use, emission of volatile organic compounds (VOC's) to the air takes place, typically at a rate of ≤ 510 g/l.
Degradability:	Not readily biodegradable
Bioaccumulation:	Minimal to none.

SECTION 13 - WASTE DISPOSAL CONSIDERATIONS

Follow local and national regulations. Consult disposal expert.

SECTION 14 - TRANSPORT INFORMATION

Proper Shipping Name:	Adhesives
Hazard Class:	3
Secondary Risk:	None
Identification Number:	UN 1133
Packing Group:	PG II
Label Required:	Class 3 Flammable Liquid
Marine Pollutant:	NO

EXCEPTION for Ground Shipping
DOT Limited Quantity: Up to 5L per inner packaging, 30 kg gross weight per package.
Consumer Commodity: Depending on packaging, these quantities may qualify under DOT as "ORM-D".

TDG INFORMATION	
TDG CLASS:	FLAMMABLE LIQUID 3
SHIPPING NAME:	ADHESIVES
UN NUMBER/PACKING GROUP:	UN 1133, PG II

SECTION 15 - REGULATORY INFORMATION

Precautionary Label Information:	Highly Flammable, Irritant, Carc. Cat. 2	Ingredient Listings:	USA TSCA, Europe EINECS, Canada DSL, Australia AICS, Korea ECL/TCCL, Japan MITI (ENCS)
Symbols:	F, Xi	R66:	Repeated exposure may cause skin dryness or cracking
Risk Phrases:	R11: Highly flammable. R36/37: Irritating to eyes and respiratory system.	R67:	Vapors may cause drowsiness and dizziness
Safety Phrases:	S2: Keep out of the reach of children S9: Keep container in a well-ventilated place. S16: Keep away from sources of ignition - No smoking.	S25:	Avoid contact with eyes.
		S26:	In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
		S33:	Take precautionary measures against static discharges.

SECTION 16 - OTHER INFORMATION

Specification Information:		
Department issuing data sheet:	IPS, Safety Health & Environmental Affairs	All ingredients are compliant with the requirements of the European Directive on RoHS (Restriction of Hazardous Substances).
E-mail address:	<EHSinfo@ipscorp.com>	
Training necessary:	Yes, training in practices and procedures contained in product literature.	
Reissue date / reason for reissue:	4/21/2015 / Updated GHS Standard Format	
Intended Use of Product:	Solvent Cement for PVC Plastic Pipe	

This product is intended for use by skilled individuals at their own risk. The information contained herein is based on data considered accurate based on current state of knowledge and experience. However, no warranty is expressed or implied regarding the accuracy of this data or the results to be obtained from the use thereof.

SECTION 1 - PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: WELD-ON® P-70™ Low VOC Primer for PVC and CPVC Plastic Pipe
 PRODUCT USE: Low VOC Primer for PVC and CPVC Plastic Pipe
 SUPPLIER:

MANUFACTURER: IPS Corporation
 17109 South Main Street, Gardena, CA 90248-3127
 P.O. Box 379, Gardena, CA 90247-0379
 Tel. 1-310-898-3300

EMERGENCY: Transportation: CHEMTEL Tel. 800.255-3924, +1 813-248-0585 (International) Medical: CHEMTEL Tel. 800.255-3924, +1 813-248-0585 (International)

SECTION 2 - HAZARDS IDENTIFICATION

GHS CLASSIFICATION:

Health	Environmental	Physical
Acute Toxicity: Category 4 Skin Irritation: Category 3 Skin Sensitization: NO Eye: Category 2	Acute Toxicity: None Known Chronic Toxicity: None Known	Flammable Liquid Category 2

GHS LABEL:



Signal Word: **Danger**

WHMIS CLASSIFICATION: CLASS B, DIVISION 2
CLASS D, DIVISION 2B

Hazard Statements	Precautionary Statements
H225: Highly flammable liquid and vapor H319: Causes serious eye irritation H332: Harmful if inhaled H335: May cause respiratory irritation H336: May cause drowsiness or dizziness H351: Suspected of causing cancer EUH019: May form explosive peroxides	P210: Keep away from heat/sparks/open flames/hot surfaces – No smoking P261: Avoid breathing dust/fume/gas/mist/vapors/spray P280: Wear protective gloves/protective clothing/eye protection/face protection P304+P340: IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing P403+P233: Store in a well ventilated place. Keep container tightly closed P501: Dispose of contents/container in accordance with local regulation

SECTION 3 - COMPOSITION/INFORMATION ON INGREDIENTS

	CAS#	EINECS #	REACH Pre-registration Number	CONCENTRATION % by Weight
Tetrahydrofuran (THF)	109-99-9	203-726-8	05-2116297729-22-0000	45 - 59
Methyl Ethyl Ketone (MEK)	78-93-3	201-159-0	05-2116297728-24-0000	19 - 29
Cyclohexanone	108-94-1	203-631-1	05-2116297718-25-0000	5 - 15
Acetone	67-64-1	200-662-2	05-2116297713-35-0000	5 - 20

All of the constituents of this adhesive product are listed on the TSCA inventory of chemical substances maintained by the US EPA, or are exempt from that listing.
 * Indicates this chemical is subject to the reporting requirements of Section 313 of the Emergency Planning and Community Right-to-Know Act of 1986 (40CFR372).
 # indicates that this chemical is found on Proposition 65's List of chemicals known to the State of California to cause cancer or reproductive toxicity.

SECTION 4 - FIRST AID MEASURES

Contact with eyes: Flush eyes immediately with plenty of water for 15 minutes and seek medical advice immediately.
Skin contact: Remove contaminated clothing and shoes. Wash skin thoroughly with soap and water. If irritation develops, seek medical advice.
Inhalation: Remove to fresh air. If breathing is stopped, give artificial respiration. If breathing is difficult, give oxygen. Seek medical advice.
Ingestion: Rinse mouth with water. Give 1 or 2 glasses of water or milk to dilute. Do not induce vomiting. Seek medical advice immediately.
Likely Routes of Exposure: Inhalation, Eye and Skin Contact
Acute symptoms and effects:
Inhalation: Severe overexposure may result in nausea, dizziness, headache. Can cause drowsiness, irritation of eyes and nasal passages.
Eye Contact: Vapors slightly uncomfortable. Overexposure may result in severe eye injury with corneal or conjunctival inflammation on contact with the liquid.
Skin Contact: Liquid contact may remove natural skin oils resulting in skin irritation. Dermatitis may occur with prolonged contact.
Ingestion: May cause nausea, vomiting, diarrhea and mental sluggishness.
Chronic (long-term) effects: Category 2 Carcinogen

SECTION 5 - FIREFIGHTING MEASURES

Suitable Extinguishing Media: Dry chemical powder, carbon dioxide gas, foam, Halon, water fog. **HMIS** **NFPA** **0-Minimal**
Unsuitable Extinguishing Media: Water spray or stream. **Health** **2** **2** **1-Slight**
Exposure Hazards: Inhalation and dermal contact **Flammability** **3** **3** **2-Moderate**
Combustion Products: Oxides of carbon and smoke **Reactivity** **0** **0** **3-Serious**
PPE **B** **4-Severe**
Protection for Firefighters: Self-contained breathing apparatus or full-face positive pressure airline masks.

SECTION 6 - ACCIDENTAL RELEASE MEASURES

Personal precautions: Keep away from heat, sparks and open flame.
 Provide sufficient ventilation, use explosion-proof exhaust ventilation equipment or wear suitable respiratory protective equipment.
 Prevent contact with skin or eyes (see section 8).
Environmental Precautions: Prevent product or liquids contaminated with product from entering sewers, drains, soil or open water course.
Methods for Cleaning up: Clean up with sand or other inert absorbent material. Transfer to a closable steel vessel.
Materials not to be used for clean up: Aluminum or plastic containers

SECTION 7 - HANDLING AND STORAGE

Handling: Avoid breathing of vapor, avoid contact with eyes, skin and clothing.
 Keep away from ignition sources, use only electrically grounded handling equipment and ensure adequate ventilation/fume exhaust hoods.
 Do not eat, drink or smoke while handling.
Storage: Store in ventilated room or shade below 44°C (110°F) and away from direct sunlight.
 Keep away from ignition sources and incompatible materials: caustics, ammonia, inorganic acids, chlorinated compounds, strong oxidizers and isocyanates.
 Follow all precautionary information on container label, product bulletins and solvent cementing literature.

SECTION 8 - PRECAUTIONS TO CONTROL EXPOSURE / PERSONAL PROTECTION

EXPOSURE LIMITS:	Component	ACGIH TLV	ACGIH STEL	OSHA PEL	OSHA STEL	OSHA PEL-Celling	CAL/OSHA PEL	CAL/OSHA Celling	CAL/OSHA STEL
	Tetrahydrofuran (THF)	50 ppm	100 ppm	200 ppm	N/E	N/E	200 ppm	N/E	250 ppm
	Methyl Ethyl Ketone (MEK)	200 ppm	300 ppm	200 ppm	N/E	N/E	200 ppm	N/E	300 ppm
	Cyclohexanone	20 ppm	50 ppm	50 ppm	N/E	N/E	25 ppm	N/E	N/E
	Acetone	500 ppm	750 ppm	1000 ppm	N/E	N/E	500 ppm	3000 ppm	750 ppm

Engineering Controls: Use local exhaust as needed.
Monitoring: Maintain breathing zone airborne concentrations below exposure limits.
Personal Protective Equipment (PPE):
Eye Protection: Avoid contact with eyes, wear splash-proof chemical goggles, face shield, safety glasses (spectacles) with brow guards and side shields, etc. as may be appropriate for the exposure.
Skin Protection: Prevent contact with the skin as much as possible. Butyl rubber gloves should be used for frequent immersion.
 Use of solvent-resistant gloves or solvent-resistant barrier cream should provide adequate protection when normal adhesive application practices and procedures are used for making structural bonds.
Respiratory Protection: Prevent inhalation of the solvents. Use in a well-ventilated room. Open doors and/or windows to ensure airflow and air changes. Use local exhaust ventilation to remove airborne contaminants from employee breathing zone and to keep contaminants below levels listed above.
 With normal use, the Exposure Limit Value will not usually be reached. When limits approached, use respiratory protection equipment.

SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Clear or purple, thin liquid	Odor Threshold:	0.88 ppm (Cyclohexanone)
Odor:	Ethereal	Boiling Range:	56°C (133°F) to 156°C (313°F)
pH:	Not Applicable	Evaporation Rate:	> 1.0 (BUAC = 1)
Melting/Freezing Point:	-108.5°C (-163.3°F) Based on first melting component: THF	Flammability:	Category 2
Boiling Point:	56°C (133°F) Based on first boiling component: Acetone	Flammability Limits:	LEL: 1.1% based on Cyclohexanone UEL: 12.8% based on Acetone
Flash Point:	-20°C (-4°F) TCC based on Acetone	Vapor Pressure:	190 mm Hg @ 20°C (68°F) Acetone
Specific Gravity:	0.858 @23°C (73°F)	Vapor Density:	>2.0 (Air = 1)
Solubility:	Solvent portion soluble in water. Resin portion separates out.	Other Data: Viscosity:	Water-thin
Partition Coefficient n-octanol/water:	Not Available		
Auto-ignition Temperature:	321°C (610°F) based on THF		
Decomposition Temperature:	Not Applicable		
VOC Content:	When applied as directed, per SCAQMD Rule 1168, Test Method 316A, VOC content is: ≤ 550 g/l.		

SECTION 10 - STABILITY AND REACTIVITY

Stability: Stable

Hazardous decomposition products: None in normal use. When forced to burn, this product gives off oxides of carbon and smoke.

Conditions to avoid: Keep away from heat, sparks, open flame and other ignition sources.

Incompatible Materials: Oxidizers, strong acids and bases, amines, ammonia

SECTION 11 - TOXICOLOGICAL INFORMATION

Toxicity:	LD50	LC50	Target Organs
Tetrahydrofuran (THF)	Oral: 2842 mg/kg (rat)	Inhalation 3 hrs. 21,000 mg/m ³ (rat)	STOT SE3
Methyl Ethyl Ketone (MEK)	Oral: 2737 mg/kg (rat), Dermal: 6480 mg/kg (rabbit)	Inhalation 8 hrs. 23,500 mg/m ³ (rat)	STOT SE3
Cyclohexanone	Oral: 1535 mg/kg (rat), Dermal: 948 mg/kg (rabbit)	Inhalation 4 hrs. 8,000 PPM (rat)	
Acetone	Oral: 5800 mg/kg (rat)	Inhalation 50,100 mg/m ³ (rat)	STOT SE3

Reproductive Effects	Teratogenicity	Mutagenicity	Embryotoxicity	Sensitization to Product	Synergistic Products
Not Established	Not Established	Not Established	Not Established	Not Established	Not Established

SECTION 12 - ECOLOGICAL INFORMATION

Ecotoxicity: None Known

Mobility: In normal use, emission of volatile organic compounds (VOC's) to the air takes place, typically at a rate of ≤ 550 g/l.

Degradability: Not available

Bioaccumulation: Minimal to none.

SECTION 13 - WASTE DISPOSAL CONSIDERATIONS

Follow local and national regulations. Consult disposal expert.

SECTION 14 - TRANSPORT INFORMATION

Proper Shipping Name: Flammable Liquid, n.o.s. (Acetone, Tetrahydrofuran)

Hazard Class: 3

Secondary Risk: None

Identification Number: UN 1993

Packing Group: PG II

Label Required: Class 3 Flammable Liquid

Marine Pollutant: NO

EXCEPTION for Ground Shipping

DOT Limited Quantity: Up to 1L per inner packaging, 30 kg gross weight per package.

Consumer Commodity: Depending on packaging, these quantities may qualify under DOT as "ORM-D" .

TDG INFORMATION

TDG CLASS: FLAMMABLE LIQUID 3

SHIPPING NAME: Flammable Liquid, n.o.s. (Acetone, Tetrahydrofuran)

UN NUMBER/PACKING GROUP: UN 1993, PG II

SECTION 15 - REGULATORY INFORMATION

Precautionary Label Information: Highly Flammable, Irritant, Carc. Cat. 2

Symbols: F, Xi

Risk Phrases: R11: Highly flammable.
R20: Harmful by inhalation.
R36/37: Irritating to eyes and respiratory system.

Safety Phrases: S9: Keep container in a well-ventilated place.
S16: Keep away from sources of ignition - No smoking.
S25: Avoid contact with eyes.

Ingredient Listings: USA TSCA, Europe EINECS, Canada DSL, Australia AICS, Korea ECL/TCCL, Japan MITI (ENCS)

R66: Repeated exposure may cause skin dryness or cracking
R67: Vapors may cause drowsiness and dizziness

S26: In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
S33: Take precautionary measures against static discharges.
S46: If swallowed, seek medical advise immediately and show this container or label.

SECTION 16 - OTHER INFORMATION

Specification Information:

Department issuing data sheet: IPS, Safety Health & Environmental Affairs

E-mail address: <EHSinfo@ipscorp.com>

Training necessary: Yes, training in practices and procedures contained in product literature.

Reissue date / reason for reissue: 4/17/2015 / Updated GHS Standard Format

Intended Use of Product: Primer for PVC and CPVC Plastic Pipe

All ingredients are compliant with the requirements of the European Directive on RoHS (Restriction of Hazardous Substances).

This product is intended for use by skilled individuals at their own risk. The information contained herein is based on data considered accurate based on current state of knowledge and experience. However, no warranty is expressed or implied regarding the accuracy of this data or the results to be obtained from the use thereof.