

Safety Data Sheet

Material Name: <0.1% each Methane, Ethane, Ethylene, Acetylene, Propane, Propylene, Methyl acetylene, n-Butane in Nitrogen

SDS ID: 00244677

Section 1 - PRODUCT AND COMPANY IDENTIFICATION

Material Name

<0.1% each Methane, Ethane, Ethylene, Acetylene, Propane, Propylene, Methyl acetylene, n-Butane in Nitrogen

Product Use

Industrial and Specialty Gas Applications

Restrictions on Use

None known

Details of the supplier of the safety data sheet

MATHESON TRI-GAS, INC.

3 Mountainview Road

Warren, NJ 07059

General Information: 1-800-416-2505

Emergency #: 1-800-424-9300 (CHEMTREC)

Outside the US: 703-527-3887 (Call collect)

Section 2 - HAZARDS IDENTIFICATION

Classification in accordance with paragraph (d) of 29 CFR 1910.1200.

Gases Under Pressure - Compressed gas

Simple Asphyxiant

GHS Label Elements

Symbol(s)



Signal Word

Warning

Hazard Statement(s)

Contains gas under pressure; may explode if heated.

May displace oxygen and cause rapid suffocation.

Precautionary Statement(s)

Prevention

None needed according to classification criteria.

Response

None needed according to classification criteria.

Storage

Protect from sunlight. Store in a well-ventilated place.

Disposal

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

Other Hazards

Rapid release of compressed gas may cause frostbite.

Section 3 - COMPOSITION / INFORMATION ON INGREDIENTS

CAS	Component Name	Percent

Safety Data Sheet

Material Name: <0.1% each Methane, Ethane, Ethylene, Acetylene, Propane, Propylene, Methyl acetylene, n-Butane in Nitrogen

SDS ID: 00244677

74-82-8	Methane	<0.1
74-84-0	Ethane	<0.1
74-85-1	Ethylene	<0.1
74-98-6	Propane	<0.1
74-86-2	Acetylene	<0.1
115-07-1	Propene	<0.1
74-99-7	Methyl acetylene	<0.1
106-97-8	Butane	<0.1
7727-37-9	Nitrogen	0-100

Section 4 - FIRST AID MEASURES

Inhalation

If adverse effects occur, remove to uncontaminated area. Give artificial respiration if not breathing. If breathing is difficult, oxygen should be administered by qualified personnel. Get immediate medical attention.

Skin

If frostbite or freezing occur, immediately flush with plenty of lukewarm water (105-115°F; 41-46°C). DO NOT USE HOT WATER. If warm water is not available, gently wrap affected parts in blankets. Get immediate medical attention.

Eyes

Flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Then get immediate medical attention.

Ingestion

If swallowed, get medical attention.

Most Important Symptoms/Effects

Acute

Frostbite, suffocation

Delayed

No information on significant adverse effects.

Note to Physicians

For inhalation, consider oxygen.

Section 5 - FIRE FIGHTING MEASURES

Extinguishing Media

Suitable Extinguishing Media

Use extinguishing agents appropriate for surrounding fire.

Unsuitable Extinguishing Media

None known

Special Hazards Arising from the Chemical

Negligible fire hazard. Containers may rupture or explode if exposed to heat.

Hazardous Combustion Products

oxides of nitrogen

Safety Data Sheet

Material Name: <0.1% each Methane, Ethane, Ethylene, Acetylene, Propane, Propylene, Methyl acetylene, n-Butane in Nitrogen

SDS ID: 00244677

Fire Fighting Measures

Move container from fire area if it can be done without risk. Cool containers with water spray until well after the fire is out. Stay away from the ends of tanks. Withdraw immediately in case of rising sound from venting safety device or any discoloration of tanks due to fire. For tank, rail car or tank truck, evacuation radius: 800 meters (1/2 mile). Use extinguishing agents appropriate for surrounding fire. Cool containers with water spray until well after the fire is out. Apply water from a protected location or from a safe distance. Do not get water directly on material. Reduce vapors with water spray. Avoid inhalation of material or combustion by-products. Stay upwind and keep out of low areas. Consider downwind evacuation if material is leaking.

Special Protective Equipment and Precautions for Firefighters

Wear personal protective clothing and equipment such as self-contained breathing apparatus (SCBA) for protection against possible exposure.

Section 6 - ACCIDENTAL RELEASE MEASURES

Personal Precautions, Protective Equipment and Emergency Procedures

Wear personal protective clothing and equipment, see Section 8.

Methods and Materials for Containment and Cleaning Up

Stop leak if possible without personal risk. Keep unnecessary people away, isolate hazard area and deny entry. Stay upwind and keep out of low areas. Do not touch or walk through spilled material. If possible, turn leaking containers so that gas escapes rather than liquid. Do not direct water at spill or source of leak. Allow substance to evaporate. Ventilate closed spaces before entering.

Environmental Precautions

Avoid release to the environment.

Section 7 - HANDLING AND STORAGE

Precautions for Safe Handling

Avoid breathing gas. Wash hands thoroughly after handling.

Conditions for Safe Storage, Including any Incompatibilities

Protect from sunlight. Store in a well-ventilated place.

Further information on storage conditions: Store and handle in accordance with all current regulations and standards. Subject to storage regulations: U.S. OSHA 29 CFR 1910.101. Keep separated from incompatible substances.

Incompatible Materials

metals, oxidizing materials

Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

Component Exposure Limits

Methane	74-82-8
ACGIH:	(See Appendix F: Minimal Oxygen Content, explosion hazard)
Mexico:	1000 ppm TWA [VLE-PPT]
Ethane	74-84-0
ACGIH:	(See Appendix F: Minimal Oxygen Content, explosion hazard)
Mexico:	1000 ppm TWA [VLE-PPT]
Ethylene	74-85-1

Safety Data Sheet

Material Name: <0.1% each Methane, Ethane, Ethylene, Acetylene, Propane, Propylene, Methyl acetylene, n-Butane in Nitrogen

SDS ID: 00244677

ACGIH:	200 ppm TWA
Mexico:	200 ppm TWA [VLE-PPT]
Propane	74-98-6
ACGIH:	(See Appendix F: Minimal Oxygen Content, explosion hazard)
NIOSH:	1000 ppm TWA ; 1800 mg/m3 TWA
	2100 ppm IDLH (10% LEL)
OSHA (US):	1000 ppm TWA ; 1800 mg/m3 TWA
Mexico:	1000 ppm TWA [VLE-PPT]
Acetylene	74-86-2
ACGIH:	(See Appendix F: Minimal Oxygen Content, explosion hazard)
NIOSH:	2500 ppm Ceiling ; 2662 mg/m3 Ceiling
Propene	115-07-1
ACGIH:	500 ppm TWA
Mexico:	500 ppm TWA [VLE-PPT]
Methyl acetylene	74-99-7
ACGIH:	1000 ppm TWA (explosion hazard)
NIOSH:	1000 ppm TWA ; 1650 mg/m3 TWA
	1700 ppm IDLH (10% LEL)
OSHA (US):	1000 ppm TWA ; 1650 mg/m3 TWA
Mexico:	1000 ppm TWA [VLE-PPT]
Butane	106-97-8
ACGIH:	1000 ppm STEL (explosion hazard)
NIOSH:	800 ppm TWA ; 1900 mg/m3 TWA
	1600 ppm IDLH (>10% LEL)
Mexico:	1000 ppm TWA [VLE-PPT]

Safety Data Sheet

Material Name: <0.1% each Methane, Ethane, Ethylene, Acetylene, Propane, Propylene, Methyl acetylene, n-Butane in Nitrogen

SDS ID: 00244677

Nitrogen	7727-37-9
ACGIH:	(See Appendix F: Minimal Oxygen Content)

ACGIH - Threshold Limit Values - Biological Exposure Indices (BEI)

There are no biological limit values for any of this product's components.

Engineering Controls

Provide local exhaust ventilation system. Ensure compliance with applicable exposure limits.

Individual Protection Measures, such as Personal Protective Equipment

Eye/face protection

For the gas: Eye protection not required, but recommended. For the liquid: Wear splash resistant safety goggles. Contact lenses should not be worn. Provide an emergency eye wash fountain and quick drench shower in the immediate work area.

Skin Protection

For the gas: Protective clothing is not required, but recommended. For the liquid: Wear appropriate protective, cold insulating clothing.

Respiratory Protection

Under conditions of frequent use or heavy exposure, respiratory protection may be needed. Respiratory protection is ranked in order from minimum to maximum. Consider warning properties before use. For Unknown Concentrations or Immediately Dangerous to Life or Health - Any supplied-air respirator with a full facepiece that is operated in a pressure-demand or other positive-pressure mode in combination with an auxiliary self-contained breathing apparatus operated in pressure-demand or other positive-pressure mode. Any self-contained breathing apparatus that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode.

Glove Recommendations

For the gas: Protective gloves are not required, but recommended. For the liquid: Wear insulated gloves.

Section 9 - PHYSICAL AND CHEMICAL PROPERTIES

Appearance	colorless gas	Physical State	gas
Odor	odorless	Color	colorless
Odor Threshold	Not available	pH	Not available
Melting Point	-210 °C (Nitrogen)	Boiling Point	-196 °C (Nitrogen)
Boiling Point Range	Not available	Freezing point	Not available
Evaporation Rate	Not available	Flammability (solid, gas)	Not Flammable
Autoignition Temperature	Not available	Flash Point	Not available
Lower Explosive Limit	Not available	Decomposition temperature	Not available
Upper Explosive Limit	Not available	Vapor Pressure	760 mmHg @ -196 °C (Nitrogen)
Vapor Density (air=1)	0.967 (Nitrogen)	Specific Gravity (water=1)	Not available

Safety Data Sheet

Material Name: <0.1% each Methane, Ethane, Ethylene, Acetylene, Propane, Propylene, Methyl acetylene, n-Butane in Nitrogen

SDS ID: 00244677

Water Solubility	1.6 % (20 °C Nitrogen)	Partition coefficient: n-octanol/water	Not available
Viscosity	1.2506 g/L (Nitrogen)	Kinematic viscosity	Not available
Solubility (Other)	Not available	Density	Not available
Physical Form	Compressed gas	Molecular Weight	Not available

Section 10 - STABILITY AND REACTIVITY

Reactivity

No reactivity hazard is expected.

Chemical Stability

Stable at normal temperatures and pressure.

Possibility of Hazardous Reactions

Will not polymerize.

Conditions to Avoid

Protect from physical damage and heat. Containers may rupture or explode if exposed to heat.

Incompatible Materials

metals, oxidizing materials

Hazardous decomposition products

oxides of nitrogen

Section 11 - TOXICOLOGICAL INFORMATION

Information on Likely Routes of Exposure

Inhalation

Nausea, vomiting, difficulty breathing, headache, drowsiness, dizziness, tingling sensation, loss of coordination, convulsions, coma

Skin Contact

Frostbite

Eye Contact

Frostbite, irritation

Ingestion

Ingestion of a gas is unlikely.

Acute and Chronic Toxicity

Component Analysis - LD50/LC50

The components of this material have been reviewed in various sources and the following selected endpoints are published:

Methane (74-82-8)

Dermal LD50 Rat >2000 mg/kg

Inhalation LC50 Rat 539600 ppm 2 h

Ethane (74-84-0)

Inhalation LC50 Rat >800000 ppm 4 h

Ethylene (74-85-1)

Inhalation LC50 Rat >57000 ppm 4 h (no deaths occurred)

Propane (74-98-6)

Inhalation LC50 Rat >800000 ppm 15 min

Safety Data Sheet

Material Name: <0.1% each Methane, Ethane, Ethylene, Acetylene, Propane, Propylene, Methyl acetylene, n-Butane in Nitrogen

SDS ID: 00244677

Propene (115-07-1)

Inhalation LC50 Rat >65000 ppm 4 h (pretreated by gavage with polychlorinated biphenyl)

Butane (106-97-8)

Inhalation LC50 Rat 658 g/m3 4 h

Product Toxicity Data

Acute Toxicity Estimate

Dermal	> 2000 mg/kg
Inhalation - Gas	> 20000 ppm

Immediate Effects

Frostbite, suffocation

Delayed Effects

No information on significant adverse effects.

Irritation/Corrosivity Data

No information on significant adverse effects.

Respiratory Sensitization

No information available for the product.

Dermal Sensitization

No information available for the product.

Component Carcinogenicity

Ethylene	74-85-1
ACGIH:	A4 - Not Classifiable as a Human Carcinogen
IARC:	Monograph 60 [1994] ; Supplement 7 [1987] (Group 3 (not classifiable))
DFG:	Category 3 (could be carcinogenic for man)
Propene	115-07-1
ACGIH:	A4 - Not Classifiable as a Human Carcinogen
IARC:	Monograph 60 [1994] ; Supplement 7 [1987] (Group 3 (not classifiable))

Germ Cell Mutagenicity

No information available for the product.

Tumorigenic Data

No information available for the product.

Reproductive Toxicity

No information available for the product.

Specific Target Organ Toxicity - Single Exposure

No target organs identified.

Specific Target Organ Toxicity - Repeated Exposure

No target organs identified.

Aspiration hazard

No information available for the product.

Medical Conditions Aggravated by Exposure

Safety Data Sheet

Material Name: <0.1% each Methane, Ethane, Ethylene, Acetylene, Propane, Propylene, Methyl acetylene, n-Butane in Nitrogen

SDS ID: 00244677

No data available.

Section 12 - ECOLOGICAL INFORMATION

Component Analysis - Aquatic Toxicity

No LOEL ecotoxicity data are available for this product's components.

Persistence and Degradability

No information available for the product.

Bioaccumulative Potential

No information available for the product.

Mobility

No information available for the product.

Section 13 - DISPOSAL CONSIDERATIONS

Disposal Methods

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

Component Waste Numbers

The U.S. EPA has not published waste numbers for this product's components.

Section 14 - TRANSPORT INFORMATION

US DOT Information:

Shipping Name: NITROGEN, COMPRESSED

Hazard Class: 2.2

UN/NA #: UN1066

Required Label(s): 2.2

IMDG Information:

Shipping Name: NITROGEN, COMPRESSED

Hazard Class: 2.2

UN#: UN1066

Required Label(s): 2.2

International Bulk Chemical Code

This material does not contain any chemicals required by the IBC Code to be identified as dangerous chemicals in bulk.

Section 15 - REGULATORY INFORMATION

U.S. Federal Regulations

This material contains one or more of the following chemicals required to be identified under SARA Section 302 (40 CFR 355 Appendix A), SARA Section 313 (40 CFR 372.65), CERCLA (40 CFR 302.4), TSCA 12(b), and/or require an OSHA process safety plan.

Ethylene	74-85-1
SARA 313:	1 % de minimis concentration
Propene	115-07-1
SARA 313:	1 % de minimis concentration

SARA Section 311/312 (40 CFR 370 Subparts B and C) reporting categories

Gas Under Pressure; Simple Asphyxiant

Safety Data Sheet

Material Name: <0.1% each Methane, Ethane, Ethylene, Acetylene, Propane, Propylene, Methyl acetylene, n-Butane in Nitrogen

SDS ID: 00244677

U.S. State Regulations

The following components appear on one or more of the following state hazardous substances lists:

Component	CAS	CA	MA	MN	NJ	PA
Methane	74-82-8	No	Yes	Yes	Yes	Yes
Ethane	74-84-0	No	Yes	Yes	Yes	Yes
Ethylene	74-85-1	No	Yes	Yes	Yes	Yes
Propane	74-98-6	No	Yes	Yes	Yes	Yes
Acetylene	74-86-2	Yes	Yes	Yes	Yes	Yes
Propene	115-07-1	Yes	Yes	Yes	Yes	Yes
Methyl acetylene	74-99-7	Yes	Yes	Yes	Yes	Yes
Butane	106-97-8	Yes	Yes	Yes	Yes	Yes
Nitrogen	7727-37-9	No	Yes	Yes	Yes	Yes

California Safe Drinking Water and Toxic Enforcement Act (Proposition 65)

Not listed under California Proposition 65.

Component Analysis - Inventory

Methane (74-82-8)

US	CA	AU	CN	EU	JP - ENCS	JP - ISHL	KR KECI - Annex 1	KR KECI - Annex 2
Yes	DSL	Yes	Yes	EIN	Yes	Yes	Yes	No

KR - REACH CCA	MX	NZ	PH	TH-TECI	TW, CN	VN (Draft)
No	Yes	Yes	Yes	Yes	Yes	Yes

Ethane (74-84-0)

US	CA	AU	CN	EU	JP - ENCS	JP - ISHL	KR KECI - Annex 1	KR KECI - Annex 2
Yes	DSL	Yes	Yes	EIN	Yes	Yes	Yes	No

KR - REACH CCA	MX	NZ	PH	TH-TECI	TW, CN	VN (Draft)
No	Yes	Yes	Yes	Yes	Yes	Yes

Ethylene (74-85-1)

Safety Data Sheet

Material Name: <0.1% each Methane, Ethane, Ethylene, Acetylene, Propane, Propylene, Methyl acetylene, n-Butane in Nitrogen

SDS ID: 00244677

US	CA	AU	CN	EU	JP - ENCS	JP - ISHL	KR KECI - Annex 1	KR KECI - Annex 2
Yes	DSL	Yes	Yes	EIN	Yes	Yes	Yes	No

KR - REACH CCA	MX	NZ	PH	TH-TECI	TW, CN	VN (Draft)
No	Yes	Yes	Yes	Yes	Yes	Yes

Propane (74-98-6)

US	CA	AU	CN	EU	JP - ENCS	JP - ISHL	KR KECI - Annex 1	KR KECI - Annex 2
Yes	DSL	Yes	Yes	EIN	Yes	Yes	Yes	No

KR - REACH CCA	MX	NZ	PH	TH-TECI	TW, CN	VN (Draft)
No	Yes	Yes	Yes	Yes	Yes	Yes

Acetylene (74-86-2)

US	CA	AU	CN	EU	JP - ENCS	JP - ISHL	KR KECI - Annex 1	KR KECI - Annex 2
Yes	DSL	Yes	Yes	EIN	Yes	Yes	Yes	No

KR - REACH CCA	MX	NZ	PH	TH-TECI	TW, CN	VN (Draft)
No	Yes	Yes	Yes	Yes	Yes	Yes

Propene (115-07-1)

US	CA	AU	CN	EU	JP - ENCS	JP - ISHL	KR KECI - Annex 1	KR KECI - Annex 2
Yes	DSL	Yes	Yes	EIN	Yes	Yes	Yes	No

KR - REACH CCA	MX	NZ	PH	TH-TECI	TW, CN	VN (Draft)
No	Yes	Yes	Yes	Yes	Yes	Yes

Methyl acetylene (74-99-7)

US	CA	AU	CN	EU	JP - ENCS	JP - ISHL	KR KECI - Annex 1	KR KECI - Annex 2
----	----	----	----	----	-----------	-----------	-------------------	-------------------

Safety Data Sheet

Material Name: <0.1% each Methane, Ethane, Ethylene, Acetylene, Propane, Propylene, Methyl acetylene, n-Butane in Nitrogen

SDS ID: 00244677

Yes	DSL	Yes	No	EIN	Yes	Yes	Yes	No
-----	-----	-----	----	-----	-----	-----	-----	----

KR - REACH CCA	MX	NZ	PH	TH-TECI	TW, CN	VN (Draft)
No	Yes	Yes	Yes	Yes	Yes	Yes

Butane (106-97-8)

US	CA	AU	CN	EU	JP - ENCS	JP - ISHL	KR KECI - Annex 1	KR KECI - Annex 2
Yes	DSL	Yes	Yes	EIN	Yes	Yes	Yes	No

KR - REACH CCA	MX	NZ	PH	TH-TECI	TW, CN	VN (Draft)
No	Yes	Yes	Yes	Yes	Yes	Yes

Nitrogen (7727-37-9)

US	CA	AU	CN	EU	JP - ENCS	JP - ISHL	KR KECI - Annex 1	KR KECI - Annex 2
Yes	DSL	Yes	Yes	EIN	Yes	No	Yes	No

KR - REACH CCA	MX	NZ	PH	TH-TECI	TW, CN	VN (Draft)
No	Yes	Yes	Yes	Yes	Yes	Yes

Section 16 - OTHER INFORMATION

NFPA Ratings

Health: 2 Fire: 0 Instability: 0

Hazard Scale: 0 = Minimal 1 = Slight 2 = Moderate 3 = Serious 4 = Severe

Summary of Changes

New SDS: 9/24/2015

Key / Legend

ACGIH - American Conference of Governmental Industrial Hygienists; ADR - European Road Transport; AU - Australia; BOD - Biochemical Oxygen Demand; C - Celsius; CA - Canada; CA/MA/MN/NJ/PA - California/Massachusetts/Minnesota/New Jersey/Pennsylvania*; CAS - Chemical Abstracts Service; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CFR - Code of Federal Regulations (US); CLP - Classification, Labelling, and Packaging; CN - China; CPR - Controlled Products Regulations; DFG - Deutsche Forschungsgemeinschaft; DOT - Department of Transportation; DSD - Dangerous Substance Directive; DSL - Domestic Substances List; EC - European Commission; EEC - European Economic Community; EIN - European Inventory of (Existing Commercial Chemical Substances); EINECS - European Inventory of Existing Commercial Chemical Substances; ENCS - Japan Existing and New Chemical Substance Inventory; EPA - Environmental Protection Agency; EU - European Union; F - Fahrenheit; F - Background (for Venezuela Biological Exposure Indices); IARC - International Agency for Research on Cancer; IATA - International Air Transport

Safety Data Sheet

Material Name: <0.1% each Methane, Ethane, Ethylene, Acetylene, Propane, Propylene, Methyl acetylene, n-Butane in Nitrogen

SDS ID: 00244677

Association; ICAO - International Civil Aviation Organization; IDL - Ingredient Disclosure List; IDLH - Immediately Dangerous to Life and Health; IMDG - International Maritime Dangerous Goods; ISHL - Japan Industrial Safety and Health Law; IUCLID - International Uniform Chemical Information Database; JP - Japan; Kow - Octanol/water partition coefficient; KR KECI Annex 1 - Korea Existing Chemicals Inventory (KECI) / Korea Existing Chemicals List (KECL); KR KECI Annex 2 - Korea Existing Chemicals Inventory (KECI) / Korea Existing Chemicals List (KECL) , KR - Korea; LD50/LC50 - Lethal Dose/ Lethal Concentration; KR REACH CCA - Korea Registration and Evaluation of Chemical Substances Chemical Control Act; LEL - Lower Explosive Limit; LLV - Level Limit Value; LOLI - List Of Lists™ - ChemADVISOR's Regulatory Database; MAK - Maximum Concentration Value in the Workplace; MEL - Maximum Exposure Limits; MX – Mexico; Ne- Non-specific; NFPA - National Fire Protection Agency; NIOSH - National Institute for Occupational Safety and Health; NJTSR - New Jersey Trade Secret Registry; Nq - Non-quantitative; NSL – Non-Domestic Substance List (Canada); NTP - National Toxicology Program; NZ - New Zealand; OSHA - Occupational Safety and Health Administration; PEL- Permissible Exposure Limit; PH - Philippines; RCRA - Resource Conservation and Recovery Act; REACH- Registration, Evaluation, Authorisation, and restriction of Chemicals; RID - European Rail Transport; SARA - Superfund Amendments and Reauthorization Act; Sc - Semi-quantitative; STEL - Short-term Exposure Limit; TCCA – Korea Toxic Chemicals Control Act; TDG - Transportation of Dangerous Goods; TH-TECI - Thailand - FDA Existing Chemicals Inventory (TECI); TLV - Threshold Limit Value; TSCA - Toxic Substances Control Act; TW – Taiwan; TWA - Time Weighted Average; UEL - Upper Explosive Limit; UN/NA - United Nations /North American; US - United States; VLE - Exposure Limit Value (Mexico); VN (Draft) - Vietnam (Draft); WHMIS - Workplace Hazardous Materials Information System (Canada).

Other Information

Disclaimer:

Matheson Tri-Gas, Inc. makes no express or implied warranties, guarantees or representations regarding the product or the information herein, including but not limited to any implied warranty or merchantability or fitness for use. Matheson Tri-Gas, Inc. shall not be liable for any personal injury, property or other damages of any nature, whether compensatory, consequential, exemplary, or otherwise, resulting from any publication, use or reliance upon the information herein.