MATHESON
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Safety Data Sheet

Material Name: PROPYLENE **SDS ID: MAT19830**

Section 1 - PRODUCT AND COMPANY IDENTIFICATION

Material Name
PROPYLENE
Synonyms
MTG MSDS 77; PROPENE; METHYLETHENE; METHYLETHYLENE; 1-PROPYLENE; 1-PROPENE; UN 1077; C3H6
Chemical Family
Hydrocarbons, aliphatic
Product Description
Classification determined in accordance with Compressed Gas Association standards.
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.
Flammable Gases - Category 1
Gases Under Pressure - Liquefied gas
Simple Asphyxiant
GHS Label Elements
Symbol(s)

Signal Word
Danger
Hazard Statement(s)
Extremely flammable gas.
Contains gas under pressure; may explode if heated.
May displace oxygen and cause rapid suffocation.
Precautionary Statement(s)
Prevention
Keep away from heat/sparks/open flame/hot surfaces - No smoking.
Response
Leaking gas fire: Do not extinguish, unless leak can be stopped safely.
Eliminate all ignition sources if safe to do so.

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
May cause frostbite upon sudden release of liquefied gas.

Section 3 - COMPOSITION / INFORMATION ON INGREDIENTS

CAS	Component Name	Percent
115-07-1	Propylene	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
Symptoms may be delayed.
Indication of any immediate medical attention and special treatment needed
Treat symptomatically and supportively.
Note to Physicians
For inhalation, consider oxygen.

Section 5 - FIRE FIGHTING MEASURES

Extinguishing Media
Suitable Extinguishing Media
carbon dioxide, regular dry chemical, Large fires: Flood with fine water spray.
Unsuitable Extinguishing Media
Do not use halogenated extinguishing agents. Do not direct water at source of leak or safety devices; icing may occur.
Special Hazards Arising from the Chemical
Extremely flammable gas. Vapor/air mixtures are explosive above flash point. The vapor is heavier than air. Vapors or gases may ignite at distant ignition sources and flash back. Electrostatic discharges may be generated by flow or agitation resulting in ignition or explosion.
Hazardous Combustion Products
oxides of carbon
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. For fires in cargo or storage area: Cool containers with water from unmanned hose holder or monitor nozzles until well after fire is out. If this is impossible then take the following precautions: Keep unnecessary people away, isolate hazard area and deny entry. Let the fire burn. 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: 1600 meters (1 mile). Stop leak if possible without personal risk. Let burn unless leak can be stopped immediately. For smaller tanks or cylinders, extinguish and isolate from other flammables. Stop flow of gas.

Special Protective Equipment and Precautions for Firefighters

Wear full protective fire fighting gear including 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

Leaking gas fire: Do not extinguish, unless leak can be stopped safely. Avoid heat, flames, sparks and other sources of ignition. Do not touch spilled material. Stop leak if possible without personal risk. Reduce vapors with water spray. Keep unnecessary people away, isolate hazard area and deny entry. Remove sources of ignition. Ventilate closed spaces before entering. Stop leak if safe to do so - Prevent entry into waterways, drains, or confined areas.

Environmental Precautions

Avoid release to the environment.

Section 7 - HANDLING AND STORAGE

Precautions for Safe Handling

Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Close valve after each use and when empty. Do not open valve until connected to equipment prepared for use. Use only with adequate ventilation. Do not breathe gas. Damaged cylinders should be handled only by specialists. Keep away from heat/sparks/open flames/hot surfaces. - No smoking. All equipment used when handling the product must be grounded. Avoid contact with eyes, skin and clothing. Wash hands thoroughly after handling. Do not eat, drink or smoke when using this product. Subject to handling regulations: U.S. OSHA 29 CFR 1910.119. Protect from physical damage.

Conditions for Safe Storage, Including any Incompatibilities

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

Store and handle in accordance with all current regulations and standards. Store in a cool, dry, well ventilated area of non-combustible construction. Grounding and bonding required. Use explosion-resistant electrical equipment. Keep away from heat, sparks, or flame. Cylinders should be stored upright (with valve protection cap in place). For additional and specific safe practices consult the following Compressed Gas Association (CGA) publications: P-1 "Safe Handling of Compressed Gases in Cylinders", AV-1 "Safe Handling and Storage of Compressed Gases", and "Compressed Gas Handbook". Use non-sparking tools and equipment. Protect from physical damage. Subject to storage regulations: U.S. OSHA 29 CFR 1910.101. Keep separated from incompatible substances.

Incompatible Materials

Acids, oxidizing materials, halo carbons, halogens

Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

Component Exposure Limits

Propylene	**115-07-1**
ACGIH:	500 ppm TWA

Mexico:	500 ppm TWA [VLE-PPT]

ACGIH - Threshold Limit Values - Biological Exposure Indices (BEI)
There are no biological limit values for any of this product's components.

Engineering Controls
Ventilation equipment should be explosion-resistant if explosive concentrations of material are present. Provide local exhaust ventilation system. Ensure compliance with applicable exposure limits. Use a back flow preventive device in the piping.

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. 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. 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: Wear appropriate chemical resistant gloves. For the liquid: Wear chemical resistant, insulated gloves.

Section 9 - PHYSICAL AND CHEMICAL PROPERTIES

Appearance	colorless gas	**Physical State**	gas
Odor	Not available	**Color**	colorless
Odor Threshold	Not available	**pH**	Not available
Melting Point	-185 °C (-301 °F)	**Boiling Point**	-47 °C (-53 °F)
Boiling Point Range	Not available	**Freezing point**	Not available
Evaporation Rate	Not available	**Flammability (solid, gas)**	flammable gas
Autoignition Temperature	455 °C (851 °F)	**Flash Point**	-108 °C (-162 °F)
Lower Explosive Limit	2 %	**Decomposition temperature**	Not available
Upper Explosive Limit	11.1 %	**Vapor Pressure**	7828 mmHg @ 21.1 °C
Vapor Density (air=1)	1.5	**Specific Gravity (water=1)**	Not available

Water Solubility	45 %	**Partition coefficient: n-octanol/water**	223.87
Viscosity	0.14 cp	**Kinematic viscosity**	Not available
Solubility (Other)	Not available	**Bioconcentration Factor (BCF)**	0.4
Density	1.7855 g/L	**Henry's Law Constant**	0.00096317 atm-m3/mole
KOC	533.33 (estimated from water solubility)	**Physical Form**	compressed gas
Molecular Formula	C-H3-C-H-C-H2	**Molecular Weight**	42.08

Solvent Solubility
Soluble
alcohol, ether, acetic acid

Section 10 - STABILITY AND REACTIVITY

Reactivity
May form explosive mixture with air.
Chemical Stability
May react on contact with air, heat, light or water.
Possibility of Hazardous Reactions
May polymerize. Polymerizes with evolution of heat.
Conditions to Avoid
Avoid heat, flames, sparks and other sources of ignition. Containers may rupture or explode if exposed to heat. Protect from physical damage. Keep away from incompatible materials.
Incompatible Materials
Acids, oxidizing materials, halo carbons, halogens
Hazardous decomposition products
oxides of carbon

Section 11 - TOXICOLOGICAL INFORMATION

Information on Likely Routes of Exposure
Inhalation
tearing, nausea, vomiting, symptoms of drunkenness, suffocation, convulsions, coma
Skin Contact
blisters, frostbite
Eye Contact
frostbite, blurred vision
Ingestion
Ingestion of 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:

Propylene (115-07-1)
Inhalation LC50 Rat >65000 ppm 4 h (pretreated by gavage with polychlorinated biphenyl)
Product Toxicity Data
Acute Toxicity Estimate

Inhalation - Gas	> 20000 ppm

Immediate Effects
Frostbite, suffocation
Delayed Effects
Symptoms may be delayed.
Irritation/Corrosivity Data
No data available.
Respiratory Sensitization
No data available.
Dermal Sensitization
No data available.
Component Carcinogenicity

Propylene	**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 data available.
Tumorigenic Data
No data available
Reproductive Toxicity
No data available.
Specific Target Organ Toxicity - Single Exposure
No target organs identified.
Specific Target Organ Toxicity - Repeated Exposure
No target organs identified.
Aspiration hazard
No data available.
Medical Conditions Aggravated by Exposure
No data available.
Additional Data
Stimulants such as epinephrine may induce ventricular fibrillation.

Section 12 - ECOLOGICAL INFORMATION

Component Analysis - Aquatic Toxicity
No LOLI 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.

Other Toxicity
No additional information available.

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: PROPYLENE
Hazard Class: 2.1
UN/NA #: UN1077
Required Label(s): 2.1

IMDG Information:
Shipping Name: PROPYLENE
Hazard Class: 2.1
UN#: UN1077
Required Label(s): 2.1

TDG Information:
Shipping Name: PROPYLENE
Hazard Class: 2.1
UN#: UN1077
Required Label(s): 2.1
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.

Propylene	**115-07-1**
SARA 313:	1 % de minimis concentration

SARA Section 311/312 (40 CFR 370 Subparts B and C) reporting categories
Flammable; Gas Under Pressure; Simple Asphyxiant
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
Propylene	**115-07-1**	Yes	Yes	Yes	Yes	Yes

California Safe Drinking Water and Toxic Enforcement Act (Proposition 65)
Not listed under California Proposition 65.

Component Analysis - Inventory
Propylene (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	VN (Draft)
No	Yes	Yes	Yes	Yes	Yes	Yes

Section 16 - OTHER INFORMATION

NFPA Ratings
Health: 2 Fire: 4 Instability: 1 Other: SA = Simple asphyxiant
Hazard Scale: 0 = Minimal 1 = Slight 2 = Moderate 3 = Serious 4 = Severe

Revision date
SDS update: 03/01/2017; 05/10/2018

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 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

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