1. Identification of substance

Product Name	PROPYLENE (R1270)
Other Name	Map-pro
Chemical Name	None
Recommended Use	Brazing gas/refrigerant gas
Supplier	Toolway Industries
Address	1-280 Hunter's Valley Road Woodbridge ON L4H 3V9 CANADA
Phone Number	+(905) 326-5450
Fax Number	+(905) 326-5451
Emergency Phone Number	1-888-CANUTEC(226-8832)(North American use) and/or 1-613-996-6666(International use)

2. Hazards identification

GHS classification	Flammable gases 1A Gases under pressure (Liquefied gas)
GHS Pictograms	
Signal words	Danger
Hazard statements	H220:Extremely flammable gas H280:Contains gas under pressure;may explode if heated
Precautionary Statement Prevention	P210:Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
Precautionary Statement Response	P377:Leaking gas fire: Do not extinguish, unless leak can be stopped safely. P381:In case of leakage, eliminate all ignition sources.
Precautionary Statement Storage	P403:Store in a well-ventilated place. P410+P403:Protect from sunlight. Store in a well-ventilated place.
Precautionary Statement Disposal	None.
Other hazards which do not result in classification	Not available.

3. Composition/information on ingredients

√ **Substances**
☐ **Mixtures**

Component Information

Component	**CAS number**	**EINECS number**	**Mass(%)**
Propylene	115-07-1	204-062-1	99%wt - 100%wt

4.First-aid measures	
NOTE TO PHYSICIAN	In case of shortness of breath, give oxygen. Keep victim warm. Keep victim under observation. Avoid breathing vapors or fumes, avoid contact with skin, eyes and clothing, and provide adequate ventilation or exhaust in the work room. Please show this SDS to the doctor who arrives at the scene.
After inhalation	Move to fresh air. Keep your breath open. If breathing is difficult, give oxygen. If the patient ingests or inhales this substance, do not perform mouth-to-mouth artificial respiration. If breathing stops. Perform CPR immediately. Get immediate medical attention.
After skin contact	Immediately remove contaminated clothing. Rinse the skin with plenty of soap and water. If you feel unwell, seek medical attention. ON FROSTBITE: rinse with plenty of water, do NOT remove clothes. Refer for medical attention.
After eye contact	Immediately flush eyes with plenty of water for at least 15 minutes. Assure adequate flushing of the eyes by separating the eyelids with fingers. Get medical attention immediately.
After ingestion	Do not induce vomiting without medical advice. If vomiting occurs naturally, have victim lean forward to reduce risk of aspiration. Loosen tight clothing such as a collar, tie, belt or waistband. Do not use mouth-to-mouth method if victim ingested the substance. Seek immediate medical attention.
Most important symptoms/effects, acute and delayed	Rapid evaporation of the liquid may cause frostbite. High concentrations in the air cause a deficiency of oxygen with the risk of unconsciousness or death. 1 Limited evidence suggests that repeated or prolonged occupational exposure may produce cumulative health effects involving organs or biochemical systems. 2 Treat symptomatically. 3 Note that symptoms may be delayed.
5. Fire-fighting measures	
Suitable extinguishing agents	Selecte suitable fire extinguishing agents according to local conditions and surrounding sanitation. Dry chemical powder, carbon dioxide or water spray can be used.
Special hazards caused by the material, its products of combustion or flue gases	1 Flammable: easily ignited by heat, sparks or flames. 2 May form explosive mixtures with air. 3 Containers exposed to fire may leak their contents through the pressure relief valve, increasing the fire and/or vapour concentration. 4 Vapors may move to the ignition source and flash back. 5 Containers may explode when heated. 6 Containers exposed to fire may leak their contents through

	the pressure relief valve. 7 Expansion or explosive decomposition may occur upon exposure to heat or flame.
Protective equipment for fire-fighters	1 When fighting fires, wear a breathing mask (MSHA/NIOSH compliant or equivalent) and full protective clothing. 2 Put out the fire at a safe distance and with adequate protection. 3 Prevent fire water from contaminating surface and groundwater systems.

6. Accidental release measures

Person-related safety precautions	1 Avoid breathing vapor, contact with skin and eyes. 2 Beware of vapor accumulation to explosive concentrations. 3 Vapors can accumulate in low areas. 4 It is recommended that emergency personnel wear positive pressure self-contained breathing apparatus, anti-static protective clothing, and chemical impermeable gloves. 5 Ensure adequate ventilation. Remove all ignition sources. 6 Quickly evacuate personnel to a safe area, away from the spill area and upwind. 7 Use personal protective equipment. Avoid breathing vapours, fumes, gases or dust. Check oxygen content before entering area. Turn leaking cylinder with the leak up to prevent escape of gas in liquid state. Keep unnecessary personnel away.
Measures for environmental protection	Prevent further leakage or spillage if safe to do so. Do not allow material to be released to the environment without proper governmental permits.
Measures for cleaning/collecting	Leak fire: Do not put out fire unless leak can be safely plugged. In case of leakage, remove all ignition sources.
Additional information	See Section 7 for information on safe handling See section 8 for information on personal protection equipment. See Section 13 for information on disposal.

7. Handling and storage

Handling

Information for safe handling	Airtight operation, full ventilation. Operators must be specially trained and strictly abide by the operating procedures. Keep away from flammable and combustible materials. In case of high concentration contact, wear self-contained filter gas mask (half mask), general work clothes and general work protective gloves. Prevent gas leakage into workplace air. Avoid contact with oxidants. Handle with care to prevent the cylinder and accessories from being damaged. Provide leakage emergency treatment equipment.

Information about protection against explosions and fires	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Do not spray on an open flame or other ignition source. Do not pierce or burn, even after use. Use of explosion-proof lighting, ventilation facilities.
STORAGE	
Requirements to be met by storerooms and containers	Store in a well-ventilated place. Sun protection. 1 Keep the container tightly closed. 2 Store in a dry, cool and ventilated place. 3 Keep away from heat, sparks, open flames and hot surfaces. 4 Store away from incompatible materials and food containers.
Information about storage in one common storage facility	Unless the cylinder is connected to the point of use with a pipe, the valve cap and valve outlet screw plug should be installed, and the cylinder should not be dragged, slipped, or rolled, and a hand truck should be used. A pressure reducing regulator should be used when connecting the cylinder to a low pressure line or system. It is absolutely not allowed to lift the cylinder cap. Install a one-way valve or trap on the discharge line to prevent harmful flow back to the cylinder. The cylinder should be stored vertically or securely fixed to prevent falling or impact. Full and empty bottles should be placed in separate areas and stored in a cool, ventilated and dry place. Do not store near combustibles, and avoid storing with salt or other corrosive substances.
Further information about storage conditions	No data.

8. Exposure controls/personal protection

Limit Values for Exposure

Component	**CAS number**	**ACGIH TLV-TWA**	**ACGIH TLV-STEL**	**NIOSH PEL-TWA**	**NIOSH PEL-STEL**
Propylene	115-07-1	500 ppm	N.E.	N.E.	N.E.

Appropriate engineering controls	1 Maintain adequate ventilation, especially in enclosed areas. 2 Ensure eyewash and shower facilities are available near the workplace. 3 Use explosion-proof electrical appliances, ventilation, lighting and other equipment. 4 Set up emergency evacuation passages and necessary release areas.
General protective and hygienic measures	Do not get this material in contact with skin. Do not get this material on clothing. Avoid contact with eyes. Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.
Personal protective equipment	Antistatic protective clothing, general operating protective gloves; self-contained filter mask, protective glasses.

Breathing equipment	If vapour concentrations exceed occupational exposure limits or symptoms such as irritation occur, use a full-face respirator (US) or type AXBEK (EN 14387) respirator cartridge.
Protection of hands	Wear chemical protective gloves (eg butyl rubber gloves). It is recommended to choose protective gloves that have been tested to EN 374, US F739 or AS/NZS 2161.1 standards.
Eye/Face protection	Wear chemical goggles (compliant with EU EN 166 or US NIOSH).
Body protection	Wear flame retardant antistatic protective clothing and antistatic protective boots.

Note: 1. N.E. means not established.

9.Physical and chemical properties

Physical state	Liquid (liquefied gas, liquid at room temperature)
Colour	Colourless
Odour	Has a hydrocarbon odour
Melting point/freezing point	-185 ℃
Boiling point or initial boiling point and boiling range	-48 ℃
Flammability	Extremely flammable
Lower and upper explosion limit/ flammability limit	2.4-10.3 %(V)
Flash point	Not applicable
Auto-ignition temperature	460 ℃
Decomposition temperature	Not applicable
pH	Not applicable
Kinematic viscosity	Not applicable
Solubility	Slightly soluble in water, soluble in ethanol and ether
Partition coefficient: n-octanol/water(log value)	1.77
Vapour pressure	1158 kPa (25 ℃)
Density and/or relative density	0.5 (water=1)
Relative vapour density (air=1)	1.5
Particle characteristics	Not applicable

10. Stability and reactivity

Reactivity	No data available.
Chemical stability	Stable under proper conditions of use and storage.

Possibility of hazardous reactions	The addition products that react with nitrogen dioxide, nitrogen oxides and ammonia to form nitrogen oxides are prone to explosion.
Conditions to avoid (e.g. static discharge, shock or vibration)	Heat and flame and spark. The extreme temperatures and direct sunlight. Static discharge.
Incompatible materials	Avoid contact with nitrogen dioxide, nitrogen oxides, ammonia, oxidants, halogenated hydrocarbons and halogens, etc.
Hazardous decomposition products	Carbon monoxide, carbon dioxide and unburned hydrocarbons (smoke).

11.Toxicological information

Routes of Entry: Dermal contact, eye contact, inhalation, ingestion.

Acute Toxicity

Propylene (CAS 115-07-1)	LD50 (Oral, rat): N/A LC50 (Inhalation, rat): 658 mg/l (4 h) LD50 (Dermal, rabbit): N/A
Skin corrosion/Irritation	Not classified
Serious eye damage/irritation	Not classified
Respiratory or skin sensitization	Not classified
Germ cell mutagenicity	Not classified
Carcinogenicity	Not classified
Reproductive toxicity	Not classified
STOT-single exposure	Not classified
STOT-repeated exposure	Not classified
Aspiration hazard	When the container is damaged, the liquid rapidly evaporates, causing supersaturation in the air of the enclosed space, posing a serious risk of suffocation.
Chronic Effects	Not classified
Further Information	When inhaled with high concentration of gas, general paralysis and other similar symptoms may occur; When in direct contact or inhalation, temporary symptoms such as dizziness, headache, dullness, wheezing, blurred consciousness, and motor dysfunction may occur. In severe cases, it can lead to arrhythmia or even cardiac arrest.

12. Ecological information

Ecotoxicity

Aquatic Toxicity	Test & Species
	96 Hr LC50 Fish: N/A
	48 Hr EC50 Daphnia: N/A
	72 Hr EC50 Algae: N/A
Persistence and	Not available

degradability	
Bioaccumulative potential	Not available
Mobility in soil	Not available
Additional Information	May be harmful to the environment.

13. Disposal considerations

WASTE DISPOSAL INSTRUCTIONS

Contact a qualified professional waste disposal service to dispose of this material.
Dispose of in accordance with local environmental regulations or local authority requirements.

14. Transport information

The Recommendation of Transport of Dangerous Goods(TDG)

UN Number	UN 1077
Proper Shipping Name	PROPYLENE
Class/Division	Division 2.1 Flammable Gases
Package Group	—
Subsidiary risk	—
labelling pictogram	
Maritime transport IMDG/ Marine pollutant (Yes/No)	Being same with TDG/No
Air transport ICAO-TI and IATA-DGR	Being same with TDG

15. Regulatory information

European/International Regulations

OSHA:	Hazardous by definition of Hazard Communication Standard (29CFR 1910.1200).
EINECS Status:	This chemical is included in EINECS inventory.
EPA TSCA Status:	This chemical is included in TSCA inventory.
Canadian DSL(Domestic Substances List):	This chemical is included in DSL.
HMIS(Hazardous Material Identification System Ratings):	Health: 1 Flammability: 3 Physical hazard: 1 Personal protection: E (4. Severe Hazard; 3. Serious Hazard; 2. Moderate Hazard; 1. Slight Hazard; 0. Minimal Hazard)

WHMIS (Canadian Workplace Hazardous Material Identification System Ratings):	A、B1.
GB 12268-2012 List of dangerous goods	This chemical is a dangerous goods on the GB 12268-2012 list of dangerous goods.

16. other information

Employers should use this information only as a supplement to other information gathered by them, and should make independent judgment of suitability of this information to ensure proper use and protect the health and safety of employees. This information is furnished without warranty, and any use of the product not in conformance with this Material Safety Data Sheet, or in combination with any other product or process, is the responsibility of the user.

This Material Safety Data Sheet was based on the "Globally Harmonized System of Classification and Labelling of Chemicals", "Recommendations on the TRANSPORT OF DANGEROUS GOODS Model Regulations", "INTERNATIONAL MARITIME DANGEROUS GOODS CODE"," International Air Transport Association Dangerous Goods Regulations", the National Standards and other related dangerous chemicals management laws, regulations and standards, which are periodically updated and changed. To make dangerous goods / hazardous chemicals comply with the relevant requirements of the latest management, regularly update is recommended.

This Material Safety Data Sheet has been compiled in both English and Chinese. For any discrepancies, the Chinese version shall prevail.

Abbreviations and acronyms	ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road RID: Regulations Concerning the International Transport of Dangerous Goods by Rail IMDG: International Maritime Code for Dangerous Goods IATA-DGR: Dangerous Goods Regulations by the "International Air Transport Association" (IATA) ICAO-TI: Technical Instructions by the "International Civil Aviation Organization" (ICAO) EINECS: European Inventory of Existing Commercial Chemical Substances CAS: Chemical Abstracts Service LC50: Lethal concentration, 50 percent LD50: Lethal dose, 50 percent EC50: effective concentration,50 percent
Edit Date	26.06.2023
Update and Revise	Original edition
Edit Standard	*Globally Harmonized System of Classification and Labelling of Chemicals* Part 1.5
Revised Institution	Technology Center of Hangzhou Customs District