

SAFETY DATA SHEET

Singapore



Propylene Chemical Grade

Section 1. Identification

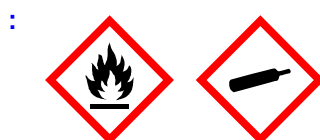
Product identifier	: Propylene Chemical Grade
Chemical name	: propene
Other means of identification	: propylene; 1-Propene; propylene in gaseous state, impure; propylene liquefied, impure; propene, pure; R1270; propylene, pure; Methylethene; Methylethylene; prop-1-ene; propylene (not chemically pure)
Product type	: Gas.
Supplier	: Saudi Basic Industries Corporation (SABIC) P.O. Box 5101 Riyadh, 11422 Kingdom of Saudi Arabia
Emergency telephone number (with hours of operation)	: +1-760-476-3960 (0h-24h) SABIC Access Code: 333619

Section 2. Hazards identification

Classification of the substance or mixture	: FLAMMABLE GASES - Category 1 GASES UNDER PRESSURE - Liquefied gas
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GHS label elements

Hazard pictograms



Signal word

: Danger

Hazard statements

: Extremely flammable gas.
Contains gas under pressure; may explode if heated.

Precautionary statements

General

: Read label before use. Keep out of reach of children. If medical advice is needed, have product container or label at hand.

Prevention

: Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

Response

: Leaking gas fire: Do not extinguish, unless leak can be stopped safely. In case of leakage, eliminate all ignition sources.

Storage

: Store in a well-ventilated place.

Disposal

: Dispose of contents and container in accordance with all local, regional, national and international regulations.

Other hazards which do not result in classification : None known.

Section 3. Composition/information on ingredients

Substance/mixture	: Substance
Chemical name	: propene
Other means of identification	: propylene; 1-Propene; propylene in gaseous state, impure; propylene liquefied, impure; propene, pure; R1270; propylene, pure; Methylethene; Methylethylene; prop-1-ene; propylene (not chemically pure)

CAS number/other identifiers

CAS number : 115-07-1

EC number : 204-062-1

Ingredient name	%	CAS number
propene	95 - 100	115-07-1

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.

Chemical formula : Not applicable.

Section 4. First aid measures

Description of necessary first aid measures

Eye contact	: Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention if irritation occurs.
Inhalation	: Remove victim to fresh air and keep at rest in a position comfortable for breathing. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention if adverse health effects persist or are severe. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.
Skin contact	: Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. To avoid the risk of static discharges and gas ignition, soak contaminated clothing thoroughly with water before removing it. Get medical attention if symptoms occur. Wash clothing before reuse. Clean shoes thoroughly before reuse.
Ingestion	: As this product is a gas, refer to the inhalation section.

Most important symptoms/effects, acute and delayed

Potential acute health effects

Eye contact	: No known significant effects or critical hazards.
Inhalation	: No known significant effects or critical hazards.
Skin contact	: No known significant effects or critical hazards.
Ingestion	: As this product is a gas, refer to the inhalation section.

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.
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Section 4. First aid measures

- Specific treatments** : No specific treatment.
- Protection of first-aiders** : No action shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.


See toxicological information (Section 11)

Section 5. Fire-fighting measures

Extinguishing media


- Suitable extinguishing media** : Use an extinguishing agent suitable for the surrounding fire.

- Unsuitable extinguishing media** : None known.

- Specific hazards arising from the chemical** :  Contains gas under pressure. Extremely flammable gas. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion.


- Hazardous thermal decomposition products** : Decomposition products may include the following materials:
carbon dioxide
carbon monoxide


- 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. Contact supplier immediately for specialist advice. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool. If involved in fire, shut off flow immediately if it can be done without risk. If this is impossible, withdraw from area and allow fire to burn. Fight fire from protected location or maximum possible distance. Eliminate all ignition sources if safe to do so.

- 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.

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

- For non-emergency personnel** :  Accidental releases pose a serious fire or explosion hazard. No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Shut off all ignition sources. No flares, smoking or flames in hazard area. Avoid breathing gas. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.
- For emergency responders** : If specialized 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".

- Environmental precautions** :  Ensure emergency procedures to deal with accidental gas releases are in place to avoid contamination of the environment. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Methods and materials for containment and cleaning up

- Small spill** : Immediately contact emergency personnel. Stop leak if without risk. Use spark-proof tools and explosion-proof equipment.
- Large spill** : Immediately contact emergency personnel. Stop leak if without risk. Use spark-proof tools and explosion-proof equipment. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Section 6. Accidental release measures

Section 7. Handling and storage

Precautions for safe handling

Protective measures : Put on appropriate personal protective equipment (see Section 8). Contains gas under pressure. Avoid contact with eyes, skin and clothing. Avoid breathing gas. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Do not enter storage areas and confined spaces unless adequately ventilated. Store and use away from heat, sparks, open flame or any other ignition source. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Use only non-sparking tools. Empty containers retain product residue and can be hazardous. Do not puncture or incinerate container.

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 a segregated and approved area. Store away from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10). Eliminate all ignition sources. Keep container tightly closed and sealed until ready for use. See Section 10 for incompatible materials before handling or use.

Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

Product/ingredient name	Exposure limits
propene	ACGIH TLV (United States, 1/2021). TWA: 500 ppm 8 hours.
propene	ACGIH TLV (United States, 1/2021). TWA: 500 ppm 8 hours.

Appropriate engineering controls : Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. The engineering controls also need to keep gas, vapor or dust concentrations below any lower explosive limits. Use explosion-proof ventilation equipment.

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. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

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 contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: safety glasses with side-shields. Recommended: full-face mask

Skin protection

Section 8. Exposure controls/personal 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. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated. 4 - 8 hours (breakthrough time): Insulated gloves suitable for low temperatures ; neoprene , nitrile rubber
- 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. When there is a risk of ignition from static electricity, wear anti-static protective clothing. For the greatest protection from static discharges, clothing should include anti-static overalls, boots and gloves.
- 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** : Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use. 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. Recommended: self-contained breathing apparatus (SCBA)

Section 9. Physical and chemical properties

Appearance

- Physical state** : Gas. [Compressed gas.]
- Color** : Colorless.
- Odor** : Mild.
- Odor threshold** : 23 to 80 ppm
- pH** : Not applicable.
- Melting point/freezing point** : -185°C (-301°F)
- Boiling point** : -48°C (-54.4°F)
- Flash point** : Closed cup: -107.78°C (-162°F)
- Burning time** : Not applicable.
- Burning rate** : Not applicable.
- Evaporation rate** : Not available.
- Flammability (solid, gas)** : Not available.
- Lower and upper explosive (flammable) limits** : Lower: 2%
Upper: 11%
- Vapor pressure** : 158 kPa (8685.71 mm Hg)
- Vapor density** : 1.5 [Air = 1]
- Relative density** : 0.5
- Density** : 0.001915 g/cm³ [25°C (77°F)]
- Solubility** : Very slightly soluble in the following materials: cold water.
- Solubility in water** : 0.2 g/l
- Partition coefficient: n-octanol/water** : 1.77
- Auto-ignition temperature** : 455°C (851°F)
- Decomposition temperature** : Not available.
- SADT** : Not available.
- Viscosity** : Not applicable.
- Flow time (ISO 2431)** : Not available.

Section 9. Physical and chemical properties

Heat of combustion : 45803592 J/kg

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 all possible sources of ignition (spark or flame). Do not pressurize, cut, weld, braze, solder, drill, grind or expose containers to heat or sources of ignition.
- Incompatible materials** : No specific data.
- Hazardous decomposition products** : Under normal conditions of storage and use, hazardous decomposition products should not be produced.
- SADT** : Not available.

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
propene	LC50 Inhalation Gas.	Rat	>86 mg/l	4 hours

Conclusion/Summary : Based on available data, the classification criteria are not met.

Irritation/Corrosion

Not available.

Conclusion/Summary

Skin : Non-irritating to the skin.

Eyes : Non-irritating to the eyes.

Respiratory : Based on available data, the classification criteria are not met.

Sensitization

Not available.

Conclusion/Summary

Skin : No known significant effects or critical hazards.

Respiratory : No known significant effects or critical hazards.

Mutagenicity

Not available.

Conclusion/Summary

: No known significant effects or critical hazards.

Carcinogenicity

Not available.

Conclusion/Summary

: Based on available data, the classification criteria are not met.

Reproductive toxicity

Not available.

Conclusion/Summary

: No known significant effects or critical hazards.

Section 11. Toxicological information

Teratogenicity

Not available.

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 : Routes of entry anticipated: Inhalation.

Potential acute health effects

Eye contact :  No known significant effects or critical hazards.
Inhalation : No known significant effects or critical hazards.
Skin contact :  No known significant effects or critical hazards.
Ingestion :  As this product is a gas, refer to the inhalation section.

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

Not available.

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.

Numerical measures of toxicity

Acute toxicity estimates

Not available.

Section 11. Toxicological information

Section 12. Ecological information

Toxicity

Product/ingredient name	Result	Species	Exposure
propene	EC50 12.1 mg/l Fresh water NOEC 4.5 mg/l Fresh water Acute LC50 28.2 mg/l Fresh water Acute LC50 51.7 mg/l Fresh water Chronic LC50 3.1 mg/l Fresh water Chronic NOEC 51.7 mg/l Fresh water	Aquatic plants Aquatic plants Daphnia - Daphnia sp. Fish Daphnia - Daphnia sp. Fish	96 hours 96 hours 48 hours 96 hours 16 days 30 days

Conclusion/Summary : Based on available data, the classification criteria are not met.

Persistence/degradability

Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
propene	-	0.61 day(s)	-

Bioaccumulative potential

Product/ingredient name	LogP _{ow}	BCF	Potential
propene	1.77	-	low

Mobility in soil

Soil/water partition coefficient (K_{oc}) : Not available.

Other adverse effects : No known significant effects or critical hazards.




Section 13. Disposal considerations

Disposal methods : 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. Empty pressure vessels should be returned to the supplier. 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. Do not puncture or incinerate container.

Section 14. Transport information

	UN	IMDG	IATA
UN number	UN1077	UN1077	UN1077
UN proper shipping name	PROPYLENE	PROPYLENE	Propylene

Section 14. Transport information

Transport hazard class(es)	2.1 	2.1 	2.1 
Packing group	-	-	-
Environmental hazards	No.	No.	No.
Additional information	-	<u>Emergency schedules</u> F-D, S-U	<u>Quantity limitation</u> Passenger and Cargo Aircraft: Forbidden. Packaging instructions: Forbidden. Cargo Aircraft Only: 150 kg. Packaging instructions: 200. Limited Quantities - Passenger Aircraft: Forbidden. Packaging instructions: Forbidden. <u>Special provisions</u> A1

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.

Transport in bulk according to Annex I/II of Marpol and the IBC Code : Not available.



Section 15. Regulatory information

Singapore - hazardous chemicals under government control

None.

International lists

National inventory

Australia	: All components are listed or exempted.
Canada	: All components are listed or exempted.
China	: All components are listed or exempted.
Europe	: All components are listed or exempted.
Japan	: Japan inventory (CSCL): All components are listed or exempted. Japan inventory (ISHL): All components are listed or exempted.
Malaysia	:  Not determined
New Zealand	: All components are listed or exempted.
Philippines	: All components are listed or exempted.
Republic of Korea	: All components are listed or exempted.
Taiwan	: All components are listed or exempted.
Turkey	: All components are listed or exempted.
United States	:  All components are active or exempted.

Section 16. Other information

History

Date of printing	: 3/4/2022
Date of issue/Date of revision	: 3/4/2022
Date of previous issue	: 6/26/2017
Version	: 1
Key to abbreviations	: ATE = Acute Toxicity Estimate BCF = Bioconcentration Factor GHS = Globally Harmonized System of Classification and Labelling of Chemicals IATA = International Air Transport Association IBC Code = International Bulk Chemical Code IMDG = International Maritime Dangerous Goods LogPow = logarithm of the octanol/water partition coefficient MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution) UN = United Nations

Procedure used to derive the classification

Classification	Justification
FLAMMABLE GASES - Category 1 GASES UNDER PRESSURE - Liquefied gas	Expert judgment Expert judgment

References : Not available.

Indicates information that has changed from previously issued version.

Notice to reader

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