

SAFETY DATA SHEET



PROPANE

SDS Number: 000003000646

Version: 6.0

Revision Date: 2024/04/04

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AIIIC - Australian Inventory of Industrial Chemicals; ANTT - National Agency for Transport by Land of Brazil; ASTM - American Society for the Testing of Materials; bw - Body weight; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; ERG - Emergency Response Guide; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECL - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; n.o.s. - Not Otherwise Specified; Nch - Chilean Norm; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NOM - Official Mexican Norm; NTP - National Toxicology Program; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TDG - Transportation of Dangerous Goods; TECI - Thailand Existing Chemicals Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative; WHMIS - Workplace Hazardous Materials Information System

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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.

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SECTION 15. REGULATORY INFORMATION

NPRI Components : propane
propene
butane
isobutane
isopentane
pentane
but-1-ene
n-hexane

The ingredients of this product are reported in the following inventories:

TCSI : On the inventory, or in compliance with the inventory
TSCA : All substances listed as active on the TSCA inventory
DSL : All components of this product are on the Canadian DSL
ENCS : On the inventory, or in compliance with the inventory
ISHL : On the inventory, or in compliance with the inventory
KECI : On the inventory, or in compliance with the inventory
PICCS : On the inventory, or in compliance with the inventory
IECSC : On the inventory, or in compliance with the inventory

Canadian lists

No substances are subject to a Significant New Activity Notification.

SECTION 16. OTHER INFORMATION

Full text of other abbreviations

ACGIH : USA. ACGIH Threshold Limit Values (TLV)
CA AB OEL : Canada. Alberta, Occupational Health and Safety Code (table 2: OEL)
CA BC OEL : Canada. British Columbia OEL
CA QC OEL : Québec. Regulation respecting occupational health and safety, Schedule 1, Part 1: Permissible exposure values for airborne contaminants
ACGIH / TWA : 8-hour, time-weighted average
ACGIH / STEL : Short-term exposure limit
CA AB OEL / TWA : 8-hour time weighted average
CA AB OEL / TWA : 8-hour Occupational exposure limit
CA BC OEL / TWA : 8-hour time weighted average
CA QC OEL / TWA EV : Time-weighted average exposure value

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Dispose of product residue in accordance with the instructions of the person responsible for waste disposal.

Contaminated packaging : Contact local or business unit authorities for guidance on disposal of product.

SECTION 14. TRANSPORT INFORMATION

International Regulations

IATA-DGR

UN/ID No. : UN 1978
Proper shipping name : Propane
Class : 2.1
Packing group : Not assigned by regulation
Labels : Flammable Gas
Packing instruction (cargo aircraft) : 200

IMDG-Code

UN number : UN 1978
Proper shipping name : PROPANE

Class : 2.1
Packing group : Not assigned by regulation
Labels : 2.1
EmS Code : F-D, S-U
Marine pollutant : no

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

Not applicable for product as supplied.

Domestic regulation

TDG

UN number : UN 1978
Proper shipping name : PROPANE

Class : 2.1
Packing group : Not assigned by regulation
Labels : 2.1
ERG Code : 115
Marine pollutant : no
Remarks : ERAP 2-0010-058

Special precautions for user

The transport classification(s) provided herein are for informational purposes only, and solely based upon the properties of the unpackaged material as it is described within this Safety Data Sheet. Transportation classifications may vary by mode of transportation, package sizes, and variations in regional or country regulations.

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Reproductive toxicity

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

STOT-single exposure

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

STOT-repeated exposure

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

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity

Product:

Toxicity to fish : Remarks: No data available

Toxicity to daphnia and other aquatic invertebrates : Remarks: No data available

Toxicity to algae/aquatic plants : Remarks: No data available

Toxicity to microorganisms : Remarks: No data available

Persistence and degradability

Product:

Biodegradability : Remarks: No data available

Bioaccumulative potential

No data available

Mobility in soil

No data available

Other adverse effects

No data available

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods

Waste from residues : The product should not be allowed to enter drains, water courses or the soil.
Offer surplus and non-recyclable solutions to a licensed disposal company.
Waste must be classified and labeled prior to recycling or disposal.
Send to a licensed waste management company.
Dispose of as hazardous waste in compliance with local and national regulations.

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Acute toxicity

Product:

- Acute oral toxicity : Remarks: Based on available data, the classification criteria are not met.
- Acute inhalation toxicity : Remarks: Based on available data, the classification criteria are not met.
- Acute dermal toxicity : Remarks: Based on available data, the classification criteria are not met.

Components:

butane:

- Acute inhalation toxicity : LC50 (Rat): 658 mg/l
Exposure time: 4 h
Test atmosphere: gas

isopentane:

- Acute inhalation toxicity : LC50 (Rat): 280 mg/l
Exposure time: 4 h
Test atmosphere: vapor

pentane:

- Acute oral toxicity : LD50 (Rat): > 2,000 mg/kg
- Acute inhalation toxicity : LC50 (Rat): 364 mg/l
Exposure time: 4 h
Test atmosphere: vapor

Skin corrosion/irritation

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

Serious eye damage/eye irritation

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

Respiratory or skin sensitization

Skin sensitization

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

Respiratory sensitization

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

Germ cell mutagenicity

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

Carcinogenicity

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

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Lower explosion limit / Lower flammability limit	: 2.1 %(V)
Vapor pressure	: 10,763 mmHg (38 °C)
Relative vapor density	: 1.56
Relative density	: No data available
Density	: No data available
Solubility(ies) Water solubility	: No data available
Partition coefficient: n-octanol/water	: No data available
Autoignition temperature	: 450 °C
Decomposition temperature	: No data available
Viscosity Viscosity, kinematic	: No data available

SECTION 10. STABILITY AND REACTIVITY

Reactivity	: No dangerous reaction known under conditions of normal use.
Chemical stability	: Stable under normal conditions.
Possibility of hazardous reactions	: Hazardous polymerization does not occur.
Conditions to avoid	: Heat, flames and sparks.
Incompatible materials	: Reactive with oxidising agents and halogenated compounds.
Hazardous decomposition products	: May release COx, smoke and irritating vapours when heated to decomposition.

SECTION 11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Eye contact
Inhalation
Skin contact

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Remarks	: 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.
Eye protection	: Wear safety glasses with side shields or goggles.
Skin and body protection	: Choose body protection in relation to its type, to the concentration and amount of dangerous substances, and to the specific work-place.
Protective measures	: Wash contaminated clothing before re-use. Wear suitable protective equipment.
Hygiene measures	: Remove and wash contaminated clothing and gloves, including the inside, before re-use. Wash face, hands and any exposed skin thoroughly after handling.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	: Gas at room temperature; liquid when stored under pressure, compressed liquefied gas
Color	: colorless
Odor	: Propane is an odourless gas. Odourized propane will contain up to 30 g Ethyl Mercaptan per 1000 L of propane.
Odor Threshold	: No data available
pH	: No data available
Melting point/freezing point	: No data available
Initial boiling point and boiling range	: -42 °C
Flash point	: -104 °C Method: closed cup
Evaporation rate	: No data available
Flammability (solid, gas)	: Extremely flammable gas.
Upper explosion limit / Upper flammability limit	: 9.5 %(V)

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SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Ingredients with workplace control parameters

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
propane	74-98-6	TWA	1,000 ppm	CA AB OEL
		TWAEV	1,000 ppm 1,800 mg/m ³	CA QC OEL
propene	115-07-1	TWA	500 ppm	CA BC OEL
		TWAEV	500 ppm	CA QC OEL
		TWA	500 ppm	ACGIH
butane	106-97-8	TWA	1,000 ppm	CA AB OEL
		TWA	1,000 ppm	CA BC OEL
		TWAEV	800 ppm 1,900 mg/m ³	CA QC OEL
		STEL	1,000 ppm	ACGIH
ethane	74-84-0	TWA	1,000 ppm	CA AB OEL
isobutane	75-28-5	TWA	1,000 ppm	CA AB OEL
		TWA	1,000 ppm	CA BC OEL
		STEL	1,000 ppm	ACGIH
isopentane	78-78-4	TWAEV	1,000 ppm	CA QC OEL
		TWA	1,000 ppm	CA BC OEL
		TWA	600 ppm	CA AB OEL
		TWA	1,000 ppm	ACGIH

Engineering measures : Adequate ventilation to ensure that Occupational Exposure Limits are not exceeded.
Use only in well-ventilated areas.
Use explosion-proof ventilation equipment.

Personal protective equipment

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.

Filter type : Always wear NIOSH-approved self-contained breathing apparatus when handling this material.

Hand protection
Material : Wear insulated gloves to prevent frostbite. Consult your PPE provider for breakthrough times and the specific glove that is best for you based on your use patterns. It should be realized that eventually any material regardless of their imperviousness, will get permeated by chemicals. Therefore, protective gloves should be regularly checked for wear and tear. At the first signs of hardening and cracks, they should be changed.

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SECTION 6. ACCIDENTAL RELEASE MEASURES

- Personal precautions, protective equipment and emergency procedures : For personal protection see section 8.
Ensure adequate ventilation.
Evacuate personnel to safe areas.
In case of inadequate ventilation wear respiratory protection.
Remove all sources of ignition.
Pay attention to the spreading of gases especially at ground level (heavier than air) and to the direction of the wind.
Mark the contaminated area with signs and prevent access to unauthorized personnel.
Only qualified personnel equipped with suitable protective equipment may intervene.
- Environmental precautions : If the product contaminates rivers and lakes or drains inform respective authorities.
- Methods and materials for containment and cleaning up : Prevent further leakage or spillage if safe to do so.
Ensure adequate ventilation.
Use explosion-proof ventilation equipment.
Non-sparking tools should be used.
Contact the proper local authorities.

SECTION 7. HANDLING AND STORAGE

- Advice on safe handling : For personal protection see section 8.
Smoking, eating and drinking should be prohibited in the application area.
In case of insufficient ventilation, wear suitable respiratory equipment.
Avoid contact with skin, eyes and clothing.
Avoid breathing gas.
Avoid spark promoters. Ground/bond container and equipment. These alone may be insufficient to remove static electricity.
Use only with adequate ventilation.
Keep away from heat and sources of ignition.
Keep container closed when not in use.
Do not use sparking tools.
Do not enter areas where used or stored until adequately ventilated.
- Conditions for safe storage : Store in original container.
Containers which are opened must be carefully resealed and kept upright to prevent leakage.
Keep in a dry, cool and well-ventilated place.
Keep in properly labeled containers.
To maintain product quality, do not store in heat or direct sunlight.
Keep away from sources of ignition - No smoking.
Ensure the storage containers are grounded/bonded.

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	Wash skin thoroughly with soap and water or use recognized skin cleanser. Wash contaminated clothing before reuse. Seek medical advice.
In case of eye contact	: Remove contact lenses. Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Obtain medical attention.
If swallowed	: Not a significant route of exposure.
Most important symptoms and effects, both acute and delayed	: Inhalation may cause central nervous system effects. Inhalation of vapours may cause drowsiness, headache, dizziness and disorientation. May cause irritation of respiratory tract. Contact with rapidly expanding gas may cause burns or frost-bite. Overexposure may lead to cardiac sensitization. High concentrations can remove oxygen and cause dizziness or suffocation.
Indication of immediate medical attention and special treatment needed, if necessary	: Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

SECTION 5. FIRE-FIGHTING MEASURES

Suitable extinguishing media	: Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Unsuitable extinguishing media	: No information available.
Specific hazards during fire fighting	: If the product release cannot be shut off safely, allow the product to burn itself out. Cool closed containers exposed to fire with water spray.
Hazardous combustion products	: Carbon oxides (CO, CO ₂), smoke and irritating vapours as products of incomplete combustion.
Further information	: Prevent fire extinguishing water from contaminating surface water or the ground water system.
Special protective equipment for fire-fighters	: Wear self-contained breathing apparatus and full protective wear. Wear a positive-pressure supplied-air respirator with full face-piece.

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Hazard Statements : H220 Extremely flammable gas.
H280 Contains gas under pressure; may explode if heated.
May displace oxygen and cause rapid suffocation.

Precautionary Statements : **Prevention:**
P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
Response:
P377 Leaking gas fire: Do not extinguish, unless leak can be stopped safely.
P381 In case of leakage, eliminate all ignition sources.
Storage:
P410 + P403 Protect from sunlight. Store in a well-ventilated place.

Other hazards
None known.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture

Components

Chemical name	Common Name/Synonym	CAS-No.	Concentration (%)
propane	propane	74-98-6	72 - 100
propene	propene	115-07-1	<= 23.8
butane	butane	106-97-8	<= 4.7
ethane	ethane	74-84-0	<= 4.6
isobutane	isobutane	75-28-5	<= 3.6
isopentane	isopentane	78-78-4	<= 1
pentane	pentane	109-66-0	<= 0.9
but-1-ene	but-1-ene	106-98-9	<= 0.5
methane	methane	74-82-8	<= 0.2

All above concentrations are percent by volume.

SECTION 4. FIRST AID MEASURES

If inhaled : Move to fresh air.
Artificial respiration and/or oxygen may be necessary.
Seek medical advice.

In case of skin contact : In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes.

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SECTION 1. IDENTIFICATION

Product name : PROPANE

Product code : 12021

Other means of identification : Propane HD-5, Propane commercial, Liquefied Petroleum Gas (LPG), C₃H₈, CGSB Propane Grade 1, CGSB Propane Grade 2, odorized propane, stench propane, automotive propane, ER62

Manufacturer or supplier's details

Company name of supplier : SUNCOR ENERGY INC.
Address : P.O. Box 2844, 150 - 6th Avenue South-West
Calgary, Alberta T2P 3E3
Canada, Telephone: 1-866-786-2671

Emergency telephone : CHEMTREC: 1-800-424-9300 (toll free) or +1 703-527-3887;
Suncor Energy: +1 403-296-3000

Recommended use of the chemical and restrictions on use

Recommended use : Propane is used as a fuel gas, refrigerant and as a raw material for organic synthesis. It is also used as a laboratory gas. The grade determines the propane content. It is supplied as pressurized liquid in tanks.

SECTION 2. HAZARDS IDENTIFICATION

GHS classification in accordance with the Hazardous Products Regulations

Flammable gases : Category 1

Gases under pressure : Liquefied gas

Simple Asphyxiant : Category 1

GHS label elements

Hazard pictograms :



Signal Word : Danger