

# SAFETY DATA SHEET



Revision: 3.0 Date: 14 April 2021

ACCORDING TO OSHA HCS (29 CFR 1910.1200)

Propane

## SECTION 1: IDENTIFICATION

### Product identifier

Product name Propane  
CAS No. 74-98-6

### Other means of identification

Dimethylmethane; propane (dot); Liquefied Petroleum Gas, LPG, C3

### Relevant identified uses of the substance or mixture and uses advised against

Identified Use(s) Organic synthesis. Fuel. Industrial use. Solvent. Refrigerant. Gas enricher. Propellant. Mixture for bubble chambers.  
Uses advised against Anything other than the above.

### Details of the supplier of the safety data sheet

Supplier Vitol Inc.  
2925 Richmond Ave, 11th Floor  
Houston, TX 77098  
Telephone (713) 230-1000  
Fax 713-230-1185  
E-mail (competent person) SDSHOU@vitol.com

### Emergency telephone number

Emergency Phone No. Chemtrec: US/Canada: 1-800-424-9300 (24h)  
Mexico: 800 681 9531 (24h)

## SECTION 2: Hazards identification

### Classification of the substance or mixture in accordance with paragraph (d) of 29 CFR 1910.1200

Physical hazards Flammable gas, Category 1  
Gases under pressure, Liquefied gas  
Health hazards Simple Asphyxiant  
Environmental hazards Not classified as hazardous for supply/use.

### Label elements

Hazard Pictogram(s)



Signal Word(s)

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)

Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.  
Leaking gas fire: Do not extinguish, unless leak can be stopped safely.  
If safe to do so: Eliminate sources of ignition.  
Avoid breathing dust/fume/gas/mist/vapours/spray.  
Use only outdoors or in a well-ventilated area.  
IF INHALED: Remove person to fresh air and keep comfortable for breathing.  
Call a POISON CENTER/doctor if you feel unwell.  
Protect from sunlight.  
Store in a well-ventilated place. Keep container tightly closed.

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## Other hazards

Store locked up.  
Dispose of contents in accordance with local, state or national legislation.

Gases under pressure: Compressed gas / Refrigerated liquefied gas / Compressed dissolved gas  
May form explosive mixture with air. The vapour is heavier than air; beware of pits and confined spaces.

## Percent of the mixture consists of ingredient(s) of unknown acute toxicity:

0% of the mixture consists of ingredients of unknown acute inhaled toxicity.  
0% of the mixture consists of ingredients of unknown acute oral toxicity.  
0% of the mixture consists of ingredients of unknown acute dermal toxicity.

## SECTION 3: Composition/information on ingredients

### Substances

Classification: OSHA HCS (29 CFR 1910.1200)

Chemical identity of the substance	%W/W	CAS No.	EC No.
Propane	90 - 100	74-98-6	200-827-9

### Hazardous constituents

Chemical identity of the substance	%W/W	CAS No.	EC No.
Propylene	0 - 10	115-07-1	204-062-1
Ethylene	0 - 1	74-85-1	200-815-3

## SECTION 4: First aid measures



### Description of first aid measures

Self-protection of the first aider

Eliminate sources of ignition. Use personal protective equipment as required. Wear appropriate personal protective equipment, avoid direct contact. Drench contaminated clothing with water before removing to avoid risk of sparks from static electricity. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Avoid all contact.

Inhalation

IF INHALED: If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical advice/attention if you feel unwell.

Skin contact

IF ON SKIN (or hair): In case of contact with liquid, thaw frosted parts with water. Do not attempt to remove clothing which has stuck to the skin. Wash affected area with plenty of soap and water. If irritation (redness, rash, blistering) develops, get medical attention. Call a POISON CENTER/doctor.

Eye Contact

IF IN EYES: Hold eyelids apart and flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If irritation develops and persists, get medical attention. If frostbite, call a physician.

Ingestion

IF SWALLOWED: Do NOT induce vomiting. If vomiting occurs turn patient on side. IF exposed or concerned: Call a POISON CENTER/doctor.

### Most important symptoms and effects, both acute and delayed

May cause genetic defects. May cause cancer.  
Inhalation: Drowsiness, Headache  
Skin Contact: Frostbite (cold burn)  
Eye Contact: May cause eye irritation.

### Indication of any immediate medical attention and special treatment needed

Treat symptomatically. Do not attempt to remove clothing that adheres to the skin due to freezing.

Notes to a physician: IF INHALED: Administer oxygen if available and artificial respiration if necessary.

## SECTION 5: Firefighting measures

### Extinguishing media

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Suitable extinguishing media

If gas has ignited, do not attempt to extinguish it. Use water spray to cool and disperse vapours and protect personnel.

Unsuitable extinguishing media

Do not use water jet. Direct water jet may spread the fire.

**Special hazards arising from the substance or mixture**

Leaking gas fire: Do not extinguish, unless leak can be stopped safely. Vapour may create explosive atmosphere. The vapour is heavier than air; beware of pits and confined spaces. Combustion or thermal decomposition will evolve very toxic, irritant and flammable vapours. Hazardous decomposition product(s): Carbon monoxide, Carbon dioxide, Aldehydes, Ketones, Hydrogen, Alkene, Methane, A mixture of solid and liquid particulates and gases including unidentified organic and inorganic compounds.

Compressed gas

Contains gas under pressure; may explode if heated. Sealed containers may rupture explosively if hot. Do not pierce or burn, even after use.

**Advice for firefighters**

Fight fire with normal precautions from a reasonable distance. Fire fighters should wear complete protective clothing including self-contained breathing apparatus. Keep containers cool by spraying with water if exposed to fire. Avoid release to the environment. Dike fire control water for later disposal.

## SECTION 6: Accidental release measures

**Personal precautions, protective equipment and emergency procedures**

Evacuate the area and keep personnel upwind. No action should be taken involving personal risk. Eliminate sources of ignition. Stop leak if safe to do so. Do not breathe gas. Avoid all contact. Keep upwind. Ensure suitable personal protection during removal of spillages. A self contained breathing apparatus should be worn.

**Methods and material for containment and cleaning up**

Spills of this liquefied gas may form ice, which can plug drains and can make valves inoperable. Contact of water with liquefied gas can result in boiling, frothing, and rapid generation of vapour. Isolate the area and allow vapours to disperse. In case of contact with liquid, thaw frosted parts with water, remove clothing carefully and wash with soap & water.

Only trained and properly protected personnel must be involved in clean-up operations. Swirl gases/vapours/mists with water spray jet. Ensure adequate ventilation. Isolate the area and allow vapours to disperse.

## SECTION 7: Handling and storage

**Precautions for safe handling**

Keep away from sources of ignition - No smoking. Use only outdoors or in a well-ventilated area. Prevent vapour build up by providing adequate ventilation during and after use. Take precautionary measures against static discharge. Use only non-sparking tools. All parts of the plant and equipment should be electrically bonded together and connected to earth. Electrical continuity should be checked at regular intervals. Antistatic clothing and footwear should be used. The vapour is heavier than air; beware of pits and confined spaces. Avoid contact with skin and eyes. Do not ingest. Avoid breathing vapours. See Section: 8. Keep good industrial hygiene. Wash hands thoroughly after handling. Contaminated clothing should be thoroughly cleaned.

**Conditions for safe storage, including any incompatibilities**

Light hydrocarbon vapours can build up in the headspace of containers. These can cause flammability / explosion hazards. Bund storage facilities to prevent soil and water pollution in the event of spillage. Keep only in original container. Keep containers properly sealed when not in use. Protect from sunlight. Containers of this material may be hazardous when empty since they retain product residue.

Storage temperature  
Incompatible materials

Stable at ambient temperatures.  
Strong oxidising agents

## SECTION 8: Exposure controls/personal protection

**Occupational exposure limits**

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SUBSTANCE	CAS No.	LTEL (8 hr TWA ppm)	LTEL (8 hr TWA mg/m <sup>3</sup> )	STEL (ppm)	STEL (mg/m <sup>3</sup> )	Note
Propane	74-98-6	1000	1800	-	-	NIOSH
		1000	1800	1000	-	OSHA
Propylene	115-07-1	500	-	-	-	ACGIH, A4
		-	-	-	-	NIOSH
Ethylene	74-85-1	200	-	-	-	OSHA
		-	-	-	-	ACGIH, A4

Note: OSHA PELs 1910.1000 TABLE Z-1/2/3 / NIOSH RELs / ACGIH TLVs

A4: Not Classifiable as a Human Carcinogen: Agents which cause concern that they could be carcinogenic for humans but which cannot be assessed conclusively because of the lack of data. In vitro or animal studies do not provide indications of carcinogenicity which are sufficient to classify the agent into one of the other categories.

#### Biological exposure indices

Not established

#### Appropriate engineering controls

Provide adequate ventilation, including appropriate local extraction if dusts, fumes or vapours are likely to be evolved. Store in a cool/low-temperature, well-ventilated (dry) place away from heat and ignition sources. Guarantee that the eye flushing systems and safety showers are located close to the working place.

#### Individual protection measures, such as personal protective equipment

Fuels are typically used, transferred and transported in closed systems. If exposure is likely (i.e. during sampling) the following advice may be appropriate. Protective clothing should be selected specifically for the working place, depending on concentration and quantity of the hazardous substances handled. The resistance of the protective clothing to chemicals should be ascertained with the respective supplier.

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#### Eye/ face protection



Use eye protection according to EN 166, designed to protect against liquid splashes.

#### Skin protection



**Hand protection:** Wear impervious gloves (recommended: EN374). Gloves should be changed regularly to avoid permeation problems. Breakthrough time of the glove material: refer to the information provided by the gloves' producer. Protective index 6, corresponding > 480 minutes of permeation time according to EN 374. Efficiency of at least 80%.

#### Body protection: Wear anti-static clothing and shoes.

Small scale: Wear suitable coveralls to prevent exposure to the skin.  
Large scale: Chemical protection suit.

#### Respiratory protection



In case of inadequate ventilation wear respiratory protection. Recommended: BS EN 14387:2004+A1

Closed system(s): Not normally required.

## SECTION 9: Physical and chemical properties

#### Information on basic physical and chemical properties

Appearance	Colorless liquefied gas
Odour	Faint.
Odour threshold	Not determined
pH	Not determined
Melting point/freezing point	-302.6 °F (-185.89 °C)

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Initial boiling point and boiling range	-43.2 °F (-41.79 °C)
Flash point	-156 °F (-104.45 °C) Closed Cup
Evaporation rate	Not determined
Flammability (solid, gas)	Flammable gasses
Upper/lower flammability or explosive limits	Upper limit: 9.5% Lower limit: 2.3%
Vapour pressure	Not determined
Vapour density	1.6
Relative density	Not determined
Solubility(ies)	Insoluble
Partition coefficient: n-octanol/water	Not determined
Auto-ignition temperature	841.73 °F (449.85 °C)
Decomposition temperature	Not determined
Viscosity	Not determined
<b>Other information</b>	
Specific Gravity	0.59
VOC	100 %
Molecular weight	44.1 g/mol
Molecular formula	C3-H8

## SECTION 10: Stability and reactivity

<b>Reactivity</b>	Not determined. Stable under normal conditions.
<b>Chemical stability</b>	Stable under normal conditions.
<b>Possibility of hazardous reactions</b>	Not determined. No information available.
<b>Conditions to avoid</b>	Keep away from heat, sources of ignition and direct sunlight.
<b>Incompatible materials</b>	Keep away from oxidising agents.
<b>Hazardous decomposition products</b>	Combustion products: Carbon monoxide, Carbon dioxide, Aldehydes, Ketones, Hydrogen, Alkene, Methane, A mixture of solid and liquid particulates and gases including unidentified organic and inorganic compounds.

## SECTION 11: Toxicological information

<b>Information on toxicological effects</b>	
<b>Acute toxicity - Ingestion</b>	Based upon the available data, the classification criteria are not met. Calculated acute toxicity estimate (ATE) >2,000 mg/kg.
<b>Acute toxicity - Inhalation</b>	Based upon the available data, the classification criteria are not met. Calculated acute toxicity estimate (ATE) >2,000 mg/kg.
<b>Acute toxicity - Skin contact</b>	Based upon the available data, the classification criteria are not met. Calculated acute toxicity estimate (ATE) > 5 mg/L (Vapour)
<b>Skin corrosion/irritation</b>	Based upon the available data, the classification criteria are not met.
<b>Serious eye damage/irritation</b>	Based upon the available data, the classification criteria are not met. Frostbite (cold burn).
<b>Respiratory or skin sensitisation</b>	Based upon the available data, the classification criteria are not met.
<b>Germ cell mutagenicity</b>	Based upon the available data, the classification criteria are not met. There is no evidence of mutagenic potential. Contains: <0.1% butadiene
<b>Carcinogenicity</b>	Based upon the available data, the classification criteria are not met. No evidence of carcinogenicity. Contains: <0.1% butadiene
<b>Reproductive toxicity</b>	Based upon the available data, the classification criteria are not met.
<b>STOT - single exposure</b>	Based upon the available data, the classification criteria are not met.
<b>STOT - repeated exposure</b>	Based upon the available data, the classification criteria are not met.
<b>Aspiration hazard</b>	Based upon the available data, the classification criteria are not met.
<b>Information on likely routes of exposure</b>	
Inhalation	Possible – accidental exposure
Ingestion	Possible – accidental exposure
Skin contact	Possible – accidental exposure
Eye contact	Unlikely – accidental exposure
<b>Early onset symptoms related to exposure</b>	Skin Contact: Frostbite (cold burn)

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Delayed health effects from exposure	None known
Exposure levels and health effects	See Section: 8
Interactive effects	
Other information	
OSHA Designated Carcinogen	Not listed
NIOSH Occupational Carcinogen List	Not listed
NTP Report on Carcinogens	Not listed
IARC Monographs	Not listed

## SECTION 12: Ecological information

Toxicity	Based upon the available data, the classification criteria are not met.
Persistence and degradability	Readily biodegradable. 100% Degradation in Water (385.5 hours) (Unnamed publication, 1981)
Bioaccumulative potential	Predicted to have low potential for bioaccumulation
Mobility in soil	The substance is predicted to have high mobility in soil.
Other adverse effects	None known.

## SECTION 13: Disposal considerations

Waste treatment methods	Dispose of this material and its container as hazardous waste. Do not empty into drains, dispose of this material and its container at hazardous or special waste collection point. Disposal should be in accordance with local, state or national legislation. Containers of this material may be hazardous when empty since they retain product residue.
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## SECTION 14: Transport information

	Road/rail (ADR/RID)	Sea transport (IMDG)	Air (ICAO/IATA)
UN number	UN1075	UN1075	UN1075
UN proper shipping name	PETROLEUM GASES, LIQUEFIED	PETROLEUM GASES, LIQUEFIED	PETROLEUM GASES, LIQUEFIED
Transport hazard class(es)	2.1	21	2.1
Packing group	None assigned.	None assigned.	None assigned.
Environmental hazards	Not applicable	Not classified as a Marine Pollutant.	Not applicable
Special precautions for user	See Section: 2		
Transport in bulk according to Annex II of Marpol and the IBC Code	Not applicable		

## SECTION 15: REGULATORY INFORMATION

### Safety, health and environmental regulations/legislation specific for the substance or mixture

#### US Federal Regulations

TSCA Chemical Data Reporting (CDR) Rule	Listed
NIOSH Occupational Carcinogen List	Not listed
EPCRA Section 313	Not listed
CWA 307- Toxic	Not listed
CERCLA - Hazardous Substances	Not listed
CWA Section 311 List of Hazardous Substances	Not listed

#### US State Regulations

Proposition 65 (California)	Listed
Massachusetts, New Jersey, Pennsylvania, Rhode Island- State Right to Know Lists	Listed

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New York - State Right to Know Lists	Listed
Minnesota - State Right to Know Lists	Listed
Massachusetts – Toxic Use reduction act	Listed

<b>Non-Regional</b>	
IARC Monographs	Not listed

## SECTION 16: Other information

The following sections contain revisions or new statements: Updated substance / mixture classification. Updated version and date. New format has been issued, all sections have been updated to include new information. Review SDS with care.

<b>Version</b>	3.0
<b>Revision Date</b>	14 April 2021
<b>Date of First Issue</b>	Not available. 2 <sup>ND</sup> ISSUE RELEASED JUNE, 15 2015

This Safety Data Sheet was prepared in accordance with US Regulation OSHA HCS (29 CFR 1910.1200)

### References:

Existing Safety Data Sheet (SDS),  
EU Harmonised Classification(s) and existing ECHA registration(s) for Propane (CAS No.: 74-98-6).

Classification of the substance or mixture in accordance with paragraph (d) of 29 CFR 1910.1200	Classification procedure
Flammable gas, Category 1	Explosion limits
Liquefied gas	Product form

### Legend

ADR/RID	ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road / RID: Regulations concerning the international railway transport of dangerous goods
ATE	Acute Toxicity Estimate
BCF	Bioconcentration factor (BCF)
CAS	CAS: Chemical Abstracts Service
EC	European Community
EN	European Standard
EU	European Union
IATA	International Air Transport Association
ICAO/IATA	ICAO: International Civil Aviation Organization / IATA: International Air Transport Association
IMDG	International Maritime Dangerous Goods
Koc	Soil Adsorption Coefficient
Kow	Partition coefficient: n-octanol/water
LC50	Lethal concentration 50
LD50	Lethal dose 50
LOAEL	Lowest dose adverse effect level
LTEL	Long Term Exposure Limit
OECD	Organisation for Economic Cooperation and Development
PBT	PBT: Persistent, Bioaccumulative and Toxic
REACH	Registration, Evaluation, Authorisation and Restriction of Chemicals
STEL	Short Term Exposure Limit
TWA	Time Weighted Average
UN	United Nations
vPvB	very Persistent and very Bioaccumulative

Training advice: Consideration should be given to the work procedures involved and the potential extent of exposure as they may determine whether a higher level of protection is required.

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