



Safety Data Sheet

Material Name: Propane

SDS No. 6182
EU/CLP GHS

Synonyms: Dimethylmethane, Liquefied Petroleum Gas (LPG), Sales Propane, Commercial Propane, Refinery Propane, Product Propane (non-odorized)

*** Section 1 - Product and Company Identification ***

Manufacturer Information

Hess Corporation
1 Hess Plaza
Woodbridge, NJ 07095-0961

Phone: 732-750-6000 Corporate EHS
Emergency # 800-424-9300 CHEMTREC
www.hess.com (Environment, Health, Safety Internet Website)

*** Section 2 - Hazards Identification ***

GHS Classification:

Flammable Gas - Category 1
Gases Under Pressure - Liquefied Gas
Specific Target Organ Systemic Toxicity (STOT) - Single Exposure Category 2

GHS LABEL ELEMENTS

Symbol(s)



Signal Word

Danger

Hazard Statements

Extremely flammable gas.
Contains gas under pressure, may explode if heated.
May cause damage to central nervous and respiratory systems.

Precautionary Statements

Prevention

Keep away from heat/sparks/open flames/hot surfaces. No smoking
Do not breathe fume/gas/mist/vapours/spray.
Wash thoroughly after handling.
Do not eat, drink or smoke when using this product.

Response

Leaking gas fire: Do not extinguish, unless leak can be stopped safely. Eliminate all ignition sources if safe to do so.
IF exposed or concerned: Call a POISON CENTER or doctor/physician.

Storage

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

Safety Data Sheet

Material Name: Propane

Store locked up.

Disposal

Dispose of contents/container in accordance with local/regional/national/international regulations.

*** Section 3 - Composition / Information on Ingredients ***

CAS #	Component	Percent
74-98-6	Propane	>85
Not Available	Mixed hydrocarbons [butane (C4) and higher]	<10
74-84-0	Ethane	<10
115-07-1	Propylene	<10

Aliphatic hydrocarbons separated from natural gas having carbon numbers in the range of C2 through C4, predominantly C3 (propane and propylene). Propane offer for commercial distribution will be odorized with trace amounts of odorant (typically well below 0.1% ethyl mercaptan).

*** Section 4 - First Aid Measures ***

First Aid: Eyes

In case of contact with eyes, hold eyelids open to allow liquid to evaporate. Cover eyes to protect from light. Seek immediate medical attention.

First Aid: Skin

Remove contaminated clothing. In case of blistering, frostbite or freeze burns seek immediate medical attention.

First Aid: Ingestion

Risk of ingestion is extremely low. However, if oral exposure occurs, seek immediate medical assistance.

First Aid: Inhalation

Remove person to fresh air. If person is not breathing, provide artificial respiration. If necessary, provide additional oxygen once breathing is restored if trained to do so. Seek medical attention immediately.

*** Section 5 - Fire Fighting Measures ***

General Fire Hazards

See Section 9 for Flammability Properties.

Liquid releases flammable vapors at well below ambient temperatures and readily forms a flammable mixture with air. Dangerous fire and explosion hazard when exposed to heat, sparks or flame. Vapors are heavier than air and may travel long distances to a point of ignition and flash back.

Hazardous Combustion Products

Carbon monoxide, carbon dioxide and non-combusted hydrocarbons (smoke).

Extinguishing Media

Use extinguishing media suitable for the surrounding material, preferably or, any extinguisher suitable for Class B fires, dry chemical, fire fighting foam, CO₂, and other gaseous agents. However, fire should not be extinguished unless flow of gas can be immediately stopped.

Unsuitable Extinguishing Media

None

Safety Data Sheet

Material Name: Propane

Fire Fighting Equipment/Instructions

Gas fires should not be extinguished unless flow of gas can be immediately stopped. Shut off gas source and allow gas to burn out. If spill or leak has not ignited, determine if water spray may assist in dispersing gas or vapor to protect personnel attempting to stop leak. Use water to cool equipment, surfaces and containers exposed to fire and excessive heat. For large fire the use of unmanned hose holders or monitor nozzles may be advantageous to further minimize personnel exposure. Isolate area, particularly around ends of storage vessels. Let vessel, tank car or container burn unless leak can be stopped. Withdraw immediately in the event of a rising sound from a venting safety device. Large fires typically require specially trained personnel and equipment to isolate and extinguish the fire.

Firefighting activities that may result in potential exposure to high heat, smoke or toxic by-products of combustion should require NIOSH- approved pressure-demand self-contained breathing apparatus with full facepiece and full protective clothing.

*** Section 6 - Accidental Release Measures ***

Recovery and Neutralization

Stop the source of the release, if safe to do so.

Materials and Methods for Clean-Up

Do not flush down sewer or drainage systems. Do not touch spilled liquid (frostbite/freeze burn hazard!). Consider the use of water spray to disperse vapors. Isolate the area until gas has dispersed. Ventilate and gas test area before entering.

Emergency Measures

Evacuate nonessential personnel and secure all ignition sources. No road flares, smoking or flames in hazard area. Consider wind direction, stay upwind and uphill, if possible. Evaluate the direction of product travel. Vapor cloud may be white, but color will dissipate as cloud disperses - fire and explosion hazard is still present!

Personal Precautions and Protective Equipment

Do not touch spilled liquid (frostbite/freeze burn hazard!).

Environmental Precautions

Do not flush down sewer or drainage systems.

Prevention of Secondary Hazards

None

*** Section 7 - Handling and Storage ***

Handling Procedures

Keep away from flame, sparks and excessive temperatures. Bond and ground containers. Use only in well ventilated areas.

Storage Procedures

Store only in approved containers. Bond and ground containers. Keep away from flame, sparks, excessive temperatures and open flame. Keep containers closed and clearly labeled. Empty product containers or vessels may contain explosive vapors. Do not pressurize, cut, heat, weld or expose such containers to sources of ignition.

Incompatibilities

Keep away from strong oxidizers, ignition sources and heat. Explosion hazard when exposed to chlorine dioxide. Heating barium peroxide with propane causes violent exothermic reaction. Heated chlorine-propane mixtures are explosive under some conditions.

Safety Data Sheet

Material Name: Propane

*** Section 8 - Exposure Controls / Personal Protection ***

Component Exposure Limits

Propane (200-827-9)

- ACGIH: 1000 ppm TWA (listed under Aliphatic hydrocarbon gases: Alkane C1-4)
Austria: 2000 ppm STEL [KZW] (3 X 60 min); 3600 mg/m3 STEL [KZW] (3 X 60 min)
1000 ppm TWA [TMW]; 1800 mg/m3 TWA [TMW]
Belgium: 1000 ppm TWA (as Aliphatic hydrocarbons [alkanes C1-4], gas)
Denmark: 1000 ppm TWA; 1800 mg/m3 TWA
Finland: 1100 ppm STEL; 2000 mg/m3 STEL
800 ppm TWA; 1500 mg/m3 TWA
Germany: 1000 ppm TWA AGW (exposure factor 4); 1800 mg/m3 TWA AGW (exposure factor 4)
1000 ppm TWA MAK; 1800 mg/m3 TWA MAK
4000 ppm Peak; 7200 mg/m3 Peak
Greece: 1000 ppm TWA; 1800 mg/m3 TWA
Ireland: 1000 ppm TWA
Asphyxiant
Portugal: 1000 ppm TWA [VLE-MP]
Spain: 1000 ppm TWA [VLA-ED]

Ethane (200-814-8)

- ACGIH: 1000 ppm TWA (listed under Aliphatic hydrocarbon gases: Alkane C1-4)
Belgium: 1000 ppm TWA (as Aliphatic hydrocarbons [alkanes C1-4], gas)
Ireland: 1000 ppm TWA
Asphyxiant
Portugal: 1000 ppm TWA [VLE-MP]
Spain: 1000 ppm TWA [VLA-ED]

Propylene (204-062-1)

- ACGIH: 500 ppm TWA
Denmark: 100 ppm TWA; 172 mg/m3 TWA
Ireland: 500 ppm TWA
Asphyxiant
Portugal: 500 ppm TWA [VLE-MP]
Spain: 500 ppm TWA [VLA-ED]
Sweden: 500 ppm LLV; 900 mg/m3 LLV

Engineering Measures

Use adequate ventilation to keep gas and vapor concentrations of this product below occupational exposure and flammability limits, particularly in confined spaces. Use explosion-proof equipment and lighting in classified/controlled areas.

Personal Protective Equipment: Respiratory

Use a NIOSH approved positive-pressure, supplied air respirator with escape bottle or self-contained breathing apparatus (SCBA) for gas concentrations above occupational exposure limits, for potential for uncontrolled release, if exposure levels are not known, or in an oxygen-deficient atmosphere. CAUTION: Flammability limits (i.e., explosion hazard) should be considered when assessing the need to expose personnel to concentrations requiring respiratory protection.

Personal Protective Equipment: Hands

Use cold-impervious, insulating gloves where contact with liquid may occur.

Safety Data Sheet

Material Name: Propane

Personal Protective Equipment: Eyes

Where there is a possibility of liquid contact, wear splash-proof safety goggles and faceshield.

Personal Protective Equipment: Skin and Body

Where contact with liquid may occur, wear apron and faceshield.

*** Section 9 - Physical & Chemical Properties ***

Appearance:	Colorless	Odor:	Odorless
Physical State:	Gas	pH:	ND
Vapor Pressure:	109.73 psig @ 70 °F (21.1 °C)	Vapor Density:	1.56 @ 32°F (0°C)
Boiling Point:	-43.8°F (-42.1°C)	Melting Point:	ND
Solubility (H2O):	slight (62.4 ppm) @ 77 °F (25 °C)	Specific Gravity:	0.531 @ 32 °F (0 °C)
Evaporation Rate:	ND	VOC:	ND
Octanol/H2O Coeff.:	ND	Flash Point:	-156°F (-104 °C)
Flash Point Method:	PMCC	Upper Flammability Limit (UFL):	9.5
Lower Flammability Limit (LFL):	2.1	Burning Rate:	ND
Auto Ignition:	842°F (450°C)		

*** Section 10 - Chemical Stability & Reactivity Information ***

Chemical Stability

This is a stable material.

Hazardous Reaction Potential

Will not occur.

Conditions to Avoid

Keep away from strong oxidizers, ignition sources and heat.

Incompatible Products

Explosion hazard when exposed to chlorine dioxide. Heating barium peroxide with propane causes violent exothermic reaction. Heated chlorine-propane mixtures are explosive under some conditions.

Hazardous Decomposition Products

Carbon monoxide, carbon dioxide and non-combusted hydrocarbons (smoke).

*** Section 11 - Toxicological Information ***

Acute Toxicity

A: General Product Information

Propane exhibits some degree of anesthetic action and is mildly irritating to the mucous membranes. At high concentrations propane acts as a simple asphyxiant without other significant physiological effects. High concentrations may cause death due to oxygen depletion.

B: Component Analysis - LD50/LC50

Propane (74-98-6)

Inhalation LC50 Rat 658 mg/L 4 h

Ethane (74-84-0)

Safety Data Sheet

Material Name: Propane

Inhalation LC50 Rat 658 mg/L 4 h

Propylene (115-07-1)

Inhalation LC50 Rat 658 mg/L 4 h

Potential Health Effects: Skin Corrosion Property/Stimulativeness

Vapors are not irritating. Direct contact to skin or mucous membranes with liquefied product or cold vapor may cause freeze burns and frostbite. Contact to mucous membranes with liquefied product may cause frostbite and freeze burns. Signs of frostbite include a change in the color of the skin to gray or white, possibly followed by blistering. Skin may become inflamed and painful.

Potential Health Effects: Eye Critical Damage/ Stimulativeness

Vapors are not irritating. However, contact with liquid or cold vapor may cause frostbite, freeze burns, and permanent eye damage.

Potential Health Effects: Ingestion

Ingestion is unlikely. Contact with mucous membranes with liquefied product may cause frostbite and freeze burns.

Potential Health Effects: Inhalation

This product is considered to be non-toxic by inhalation. Inhalation of high concentrations may cause central nervous system depression such as dizziness, drowsiness, headache, and similar narcotic symptoms, but no long-term effects. Numbness, a "chilly" feeling, and vomiting have been reported from accidental exposures to high concentrations. This product is a simple asphyxiant. In high concentrations it will displace oxygen from the breathing atmosphere, particularly in confined spaces. Signs of asphyxiation will be noticed when oxygen is reduced to below 16%, and may occur in several stages. Symptoms may include rapid breathing and pulse rate, headache, dizziness, visual disturbances, mental confusion, incoordination, mood changes, muscular weakness, tremors, cyanosis, narcosis and numbness of the extremities. Unconsciousness leading to central nervous system injury and possibly death will occur when the atmospheric oxygen concentration is reduced to about 6% to 8% or less.

WARNING: The burning of any hydrocarbon as a fuel in an area without adequate ventilation may result in hazardous levels of combustion products, including carbon monoxide, and inadequate oxygen levels, which may cause unconsciousness, suffocation, and death.

Respiratory Organs Sensitization/Skin Sensitization

This product is not reported to have any skin sensitization effects.

Generative Cell Mutagenicity

This product is not reported to have any mutagenic effects.

Carcinogenicity

A: General Product Information

This product is not reported to have any carcinogenic effects.

B: 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))

Reproductive Toxicity

This product is not reported to have any reproductive toxicity effects.

Safety Data Sheet

Material Name: Propane

Specified Target Organ General Toxicity: Single Exposure

This product may cause damage to heart.

Specified Target Organ General Toxicity: Repeated Exposure

This product is not reported to have any specific target organ repeat effects.

Aspiration Respiratory Organs Hazard

This product is not reported to have any aspiration hazard effects.

* * * **Section 12 - Ecological Information** * * *

Ecotoxicity

A: General Product Information

Liquid release is only expected to cause localized, non-persistent environmental damage, such as freezing. Biodegradation of this product may occur in soil and water. Volatilization is expected to be the most important removal process in soil and water. This product is expected to exist entirely in the vapor phase in ambient air.

B: Component Analysis - Ecotoxicity - Aquatic Toxicity

No ecotoxicity data are available for this product's components.

Persistence/Degradability

No information available.

Bioaccumulation

No information available.

Mobility in Soil

No information available.

* * * **Section 13 - Disposal Considerations** * * *

Waste Disposal Instructions

See Section 7 for Handling Procedures. See Section 8 for Personal Protective Equipment recommendations.

Disposal of Contaminated Containers or Packaging

Dispose of contents/container in accordance with local/regional/national/international regulations.

* * * **Section 14 - Transportation Information** * * *

IATA Information

Shipping Name: Petroleum Gases, Liquefied

UN #: 1075 **Hazard Class:** 2.1

ICAO Information

Shipping Name: Petroleum Gases, Liquefied

UN #: 1075 **Hazard Class:** 2.1

IMDG Information

Shipping Name: Petroleum Gases, Liquefied

UN #: 1075 **Hazard Class:** 2.1

* * * **Section 15 - Regulatory Information** * * *

Regulatory Information

Safety Data Sheet

Material Name: Propane

Component Analysis – Inventory

Component/CAS	EC #	EEC	CAN	TSCA
Propane 74-98-6	200-827-9	EINECS	DSL	Yes
Ethane 74-84-0	200-814-8	EINECS	DSL	Yes
Propylene 115-07-1	204-062-1	EINECS	DSL	Yes

*** Section 16 - Other Information ***

Key/Legend

ACGIH = American Conference of Governmental Industrial Hygienists; ADG = Australian Code for the Transport of Dangerous Goods by Road and Rail; ADR/RID = European Agreement of Dangerous Goods by Road/Rail; AS = Standards Australia; DFG = Deutsche Forschungsgemeinschaft; DOT = Department of Transportation; DSL = Domestic Substances List; EEC = European Economic Community; EINECS = European Inventory of Existing Commercial Chemical Substances; ELINCS = European List of Notified Chemical Substances; EU = European Union; HMIS = Hazardous Materials Identification System; IARC = International Agency for Research on Cancer; IMO = International Maritime Organization; IATA = International Air Transport Association; MAK = Maximum Concentration Value in the Workplace; NDSL = Non-Domestic Substances List; NFPA = National Fire Protection Association; NOHSC = National Occupational Health & Safety Commission; NTP = National Toxicology Program; STEL = Short-term Exposure Limit; TDG = Transportation of Dangerous Goods; TLV = Threshold Limit Value; TSCA = Toxic Substances Control Act; TWA = Time Weighted Average

Literature References

None

Other Information

Information presented herein has been compiled from sources considered to be dependable, and is accurate and reliable to the best of our knowledge and belief, but is not guaranteed to be so. Since conditions of use are beyond our control, we make no warranties, expressed or implied, except those that may be contained in our written contract of sale or acknowledgment.

Vendor assumes no responsibility for injury to vendee or third persons proximately caused by the material if reasonable safety procedures are not adhered to as stipulated in the data sheet. Additionally, vendor assumes no responsibility for injury to vendee or third persons proximately caused by abnormal use of the material, even if reasonable safety procedures are followed. Furthermore, vendee assumes the risk in their use of the material.

End of Sheet