

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Product name : Propane HD-5 Odorized
CAS No : 74-98-6

1.2. Relevant identified uses of the substance or mixture and uses advised against

Use of the substance/mixture : Commercial petroleum industry product.

1.3. Details of the supplier of the safety data sheet

Enterprise Products
1100 Louisiana St.
Houston, TX 77002

1.4. Emergency telephone number

Emergency number : CHEMTREC: 1-800-424-9300 :
Corporate contact : 1-888-806-3794

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

GHS-US classification

Flam. Gas 1 H220
Liquefied gas H280

2.2. Label elements

GHS-US labelling

Hazard pictograms (GHS-US) :



GHS02

GHS04

Signal word (GHS-US) :

Danger

Hazard statements (GHS-US) :

H220 - Extremely flammable gas
H280 - Contains gas under pressure; may explode if heated
H281 - May cause cryogenic burns or injury

Precautionary statements (GHS-US) :

P210 - Keep away from heat/sparks/open flames/hot surfaces. - No smoking
P282 - Wear cold insulating gloves/face shield/eye protection
P315 - Get immediate medical advice and attention
P336 - Thaw frosted parts with lukewarm water. Do not rub affected area
P377 - Leaking gas fire: Do not extinguish, unless leak can be stopped safely
P381 - Eliminate all ignition sources if safe to do so
P403 - Store in a well-ventilated place

2.3. Other hazards

Other hazards not contributing to the classification : Warning – May displace oxygen and cause rapid suffocation

2.4. Unknown acute toxicity (GHS-US)

No data available

SECTION 3: Composition/information on ingredients

3.1. Substance

Not applicable

Full text of H-phrases: see section 16

3.2. Mixture

Name	Product identifier	%	GHS-US classification
propane	(CAS No) 74-98-6	90 - 95	Flam. Gas 1, H220 Compressed gas, H280

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Name	Product identifier	%	GHS-US classification
Ethane	(CAS No) 74-84-0	< 6	Flam. Gas 1, H220 Compressed gas, H280
Propene, propylene	(CAS No) 115-07-1	< 1.5	Not classified
Isobutane	(CAS No) 75-28-5	< 1	Not classified
Ethanethiol, ethyl mercaptan	(CAS No) 75-08-1	< 1	Not classified

SECTION 4: First aid measures

4.1. Description of first aid measures

- First-aid measures general : Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label where possible).
- First-aid measures after inhalation : Call 911 or emergency medical service. If not breathing, give artificial respiration. If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing. Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device.
- First-aid measures after skin contact : In case of frostbite spray with water for at least 15 minutes. Apply a sterile dressing. Obtain medical assistance.
- First-aid measures after eye contact : Seek medical attention immediately. Contact with the liquid may cause frostbite and serious damage to eyes. Irrigate copiously with clean, fresh water for at least 15 minutes, holding the eyelids apart.
- First-aid measures after ingestion : Rinse mouth. Do NOT induce vomiting. Vomiting: prevent asphyxia/aspiration pneumonia. Obtain emergency medical attention.

4.2. Most important symptoms and effects, both acute and delayed

- Symptoms/injuries after inhalation : Cough. Shortness of breath.
- Symptoms/injuries after skin contact : May cause frostbite.
- Symptoms/injuries after eye contact : May cause frostbite.
- Symptoms/injuries after ingestion : This product is a compressed gas; hence oral exposure and resulting acute toxicity are unlikely.

4.3. Indication of any immediate medical attention and special treatment needed

Epinephrine and other sympathomimetic drugs may initiate cardiac arrhythmias (irregular beating) in persons exposed to this material.

SECTION 5: Firefighting measures

5.1. Extinguishing media

- Suitable extinguishing media : Class B fire extinguisher; carbon dioxide; multipurpose dry chemical, water fog or alcohol resistant foam.
- Unsuitable extinguishing media : Do not use a heavy water stream.

5.2. Special hazards arising from the substance or mixture

- Fire hazard : Extremely flammable gas. Not flammable.
- Explosion hazard : May form flammable/explosive vapor-air mixture. Heat may build pressure, rupturing closed containers, spreading fire and increasing risk of burns and injuries.

5.3. Advice for firefighters

- Protection during firefighting : Do not enter fire area without proper protective equipment, including respiratory protection.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

- General measures : Remove ignition sources. Use special care to avoid static electric charges. Eliminate every possible source of ignition. No naked lights. No smoking. Isolate from fire, if possible, without unnecessary risk.

6.1.1. For non-emergency personnel

- Emergency procedures : Evacuate unnecessary personnel.

6.1.2. For emergency responders

- Protective equipment : Equip cleanup crew with proper protection.
- Emergency procedures : Ventilate area.

6.2. Environmental precautions

Prevent entry to sewers and public waters. Notify authorities if liquid enters sewers or public waters.

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6.3. Methods and material for containment and cleaning up

- For containment : Call Emergency Telephone Number(s) provided in Section 1. As an immediate precautionary measure, isolate spill or leak area for at least 100 meters (330 feet) in all directions. Keep unauthorized personnel away. Stay upwind. Keep out of low areas. Ventilate closed spaces before entering.
- Methods for cleaning up : Store aways from other materials.

6.4. Reference to other sections

See Heading 8. Exposure controls and personal protection.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

- Additional hazards when processed : Handle empty containers with care because residual vapors are flammable. Flammable gas. Hazardous waste due to potential risk of explosion.
- Precautions for safe handling : Use only with adequate ventilation. Wear appropriate personal protective equipment and use exposure controls. Avoid all contact with skin and eyes. Avoid breathing product dust or vapors. Use explosion-proof electrical (ventillating, lighting and material handling) equipment. Do not reuse container. Remove contaminated clothing immediately. Wash with soap and water after working with this product.
- Hygiene measures : Contaminated work clothing should not be allowed out of the workplace. Do not eat, drink or smoke when using this product. Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work.

7.2. Conditions for safe storage, including any incompatibilities

- Technical measures : Proper grounding procedures to avoid static electricity should be followed.
- Storage conditions : Keep only in the original container in a cool, well ventilated place away from : all heat sources, direct sunlight, where freezing is possible, incompatible materials, and away from oxygen cylinders or other oxidizers by a minimum distance of 20 feet, or by a barrier of non-combustible material at least 5 feet high having a fire rating of at least 1/2 hour. Store in the original container or an approved alternative made from compatible material. Do not store in unlabeled containers. Treat empty containers in a similar fashion as residual product may exist. Keep container closed when not in use. Keep in fireproof place.
- Incompatible products : Strong bases. Strong acids.
- Incompatible products : Sources of ignition. Direct sunlight. Heat sources.
- Storage temperature : ≤ 50 °C
- Storage area : Store in a well-ventilated place.

7.3. Specific end use(s)

No additional information available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Propane (74-98-6)		
USA ACGIH	Remark (ACGIH)	URT irr; CNS impair
USA OSHA	OSHA PEL (TWA) (mg/m ³)	1800 mg/m ³
USA OSHA	OSHA PEL (TWA) (ppm)	1000 ppm
USA OSHA	OSHA PEL (Ceiling) (mg/m ³)	25 mg/m ³
USA OSHA	OSHA PEL (Ceiling) (ppm)	10 ppm
Ethyl Mercaptan (75-08-1)		
USA ACGIH	ACGIH TWA (ppm)	0.50 ppm

8.2. Exposure controls

- Appropriate engineering controls : Provide adequate general and local exhaust ventilation. Ensure exposure is below occupational exposure limits (where available).
- Personal protective equipment : Self-contained breathing apparatus if conc. in air > 1000 ppm. Gloves. Protective clothing. Protective goggles.



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Materials for protective clothing	: Long sleeve shirt and long pants or coveralls. Consider wearing butyl rubber apron or outerwear where splashing may occur. Fully encapsulating, vapor protective clothing should be worn for spills and leaks with no fire.
Hand protection	: Any impervious gloves including butyl rubber, nitrile rubber or neoprene rubber.
Eye protection	: Employees should be provided with and required to use splash-proof safety goggles and splash shields where there is any possibility of product coming in contact with the eyes. Ensure that an eye wash station is operable and nearby.
Skin and body protection	: Nitrile rubber gloves. Wear suitable protective clothing.
Respiratory protection	: Depending on airborne concentration, a full-face supplied air respirator is recommended because air purifying respirators cannot provide adequate protection.
Other information	: Do not eat, drink or smoke during use.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	: Gas
Appearance	: Colorless gas or liquefied gas.
Color	: Colorless.
Odor	: Distinctive odor due to the addition of ethyl mercaptan.
Odor threshold	: Not Established Not Established
pH	: Not Applicable
Relative evaporation rate (butylacetate=1)	: Not Established
Relative evaporation rate (ether=1)	: Not Established
Melting point	: Not Established
Freezing point	: -190 °C (-309°F)
Boiling point	: -42 °C (-44°F)
Flash point	: -104 °C (-155°F); Closed Cup.
Self ignition temperature	: No data available
Decomposition temperature	: No data available
Flammability (solid, gas)	: No data available
Vapor pressure	: Not Established
Relative vapor density at 20 °C	: 1.6 at 101 kPa
Relative density	: No data available
Density	: 4.17 at 16°C (61°F)
Solubility	: Insoluble.
Log Pow	: No data available
Log Kow	: No data available
Viscosity, kinematic	: No data available
Viscosity, dynamic	: No data available
Explosive properties	: No data available
Oxidising properties	: No data available
Explosive limits	: No data available

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

No additional information available

10.2. Chemical stability

This product is anticipated to be stable under normal ambient storage and handling conditions of temperature and pressure.

10.3. Possibility of hazardous reactions

Not established.

10.4. Conditions to avoid

Direct sunlight. Extremely high or low temperatures. Open flame. Overheating. Heat. Sparks.

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10.5. Incompatible materials

Oxidizing agent. chlorine. fluorine. bromine and metal catalysts.

10.6. Hazardous decomposition products

Products of thermal decomposition include sulfur oxides, carbon oxides and nitrogen oxides.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity : Not classified

Propane (74-98-6)	
LD50 oral rat	NE
LD50 dermal rabbit	NE
LC50 inhalation rat (mg/l)	658 mg/l/4h
Additional information	This product is non-toxic and is a simple asphyxiant; however, it does have slight anesthetic properties and higher concentrations may cause dizziness.

Ethanethiol, ethyl mercaptan (75-08-1)	
ATE (gases)	4500.000 ppmV/4h
ATE (vapors)	11.000 mg/l/4h
ATE (dust,mist)	1.500 mg/l/4h

Skin corrosion/irritation : Not classified

pH: Not Applicable

Serious eye damage/irritation : Not classified

pH: Not Applicable

Respiratory or skin sensitisation : Not classified

Germ cell mutagenicity : Not classified

Carcinogenicity : Not classified

(This product is not listed as a carcinogen by NTP, OSHA, or IARC.)

Reproductive toxicity : Not classified

Specific target organ toxicity (single exposure) : Not classified

Propane HD-5 Odorized (74-98-6)	
Additional information	Exposure may have adverse health effects.

Specific target organ toxicity (repeated exposure) : Not classified

Propane HD-5 Odorized (74-98-6)	
Additional information	Repeated exposure may cause frostbite injuries, respiratory, and central nervous system effects, depending on routes of exposure.

Aspiration hazard : Not classified

Potential Adverse human health effects and symptoms : Based on available data, the classification criteria are not met.

Symptoms/injuries after inhalation : Cough. Shortness of breath.

Symptoms/injuries after skin contact : May cause frostbite.

Symptoms/injuries after eye contact : May cause frostbite.

Symptoms/injuries after ingestion : This product is a compressed gas; hence oral exposure and resulting acute toxicity are unlikely.

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general : This product has no known eco-toxicological effects.

Ecology - water : This product is not expected to be harmful to aquatic life.

12.2. Persistence and degradability

Propane HD-5 Odorized (74-98-6)	
Persistence and degradability	Readily biodegradable.

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12.3. Bioaccumulative potential

Propane HD-5 Odorized (74-98-6)

Bioconcentration factor (BCF REACH)	log BCF is about 1.56-1.78; therefore the product is not expected to accumulate.
Bioaccumulative potential	No ecological damage caused by this product.

12.4. Mobility in soil

No additional information available

12.5. Other adverse effects

Other adverse effects : Any other adverse environmental effects, in any form, such as environmental fate (exposure), ozone depletion potential, photochemical ozone creation potential, endocrine disrupting potential, and global warming potential are indicated in this section if data exists. Otherwise, this data has not been established.

Other information : Avoid release to the environment.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Waste disposal recommendations : It is recommended that this product, in any form, be incinerated in a suitable combustion chamber for disposal. Empty containers should be disposed of in a similar fashion due to presence of product residue. Follow applicable Federal, state and local regulations.

Additional information : Handle empty containers with care because residual vapors are flammable. Hazardous waste due to potential risk of explosion.

Ecology - waste materials : Avoid release to the environment.

SECTION 14: Transport information

In accordance with DOT

Transport document description : UN1075 Petroleum gases, liquefied or Liquefied petroleum gas, 2.1

UN-No.(DOT) : UN1075

Proper Shipping Name (DOT) : Petroleum gases, liquefied
or Liquefied petroleum gas

Department of Transportation (DOT) Hazard Classes : 2.1 - Class 2.1 - Flammable gas 49 CFR 173.115

Hazard labels (DOT) : 2.1 - Flammable gas



DOT Special Provisions (49 CFR 172.102) : T50 - When portable tank instruction T50 is referenced in Column (7) of the 172.101 Table, the applicable liquefied compressed gases are authorized to be transported in portable tanks in accordance with the requirements of 173.313 of this subchapter.

DOT Packaging Exceptions (49 CFR 173.xxx) : 306

DOT Packaging Non Bulk (49 CFR 173.xxx) : 304

DOT Packaging Bulk (49 CFR 173.xxx) : 314;315

DOT Quantity Limitations Passenger aircraft/rail (49 CFR 173.27) : Forbidden

DOT Quantity Limitations Cargo aircraft only (49 CFR 175.75) : 150 kg

DOT Vessel Stowage Location : E - The material may be stowed "on deck" or "under deck" on a cargo vessel and on a passenger vessel carrying a number of passengers limited to not more than the larger of 25 passengers, or one passenger per each 3 m of overall vessel length, but is prohibited from carriage on passenger vessels in which the limiting number of passengers is exceeded.

DOT Vessel Stowage Other : 40 - Stow "clear of living quarters"

Marine pollutant : Not Listed

Additional information

Other information : No supplementary information available.

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ADR

Transport document description :

Transport by sea

No additional information available

Air transport

Class (IATA) : 2.1 - Gases : Flammable

SECTION 15: Regulatory information

15.1. US Federal regulations

Propane HD-5 Odorized (74-98-6)	
EPA TSCA Regulatory Flag	This product is listed on the TSCA inventory or otherwise complies with TSCA premanufacture notification requirements
SARA Section 311/312 Hazard Classes	Fire hazard Immediate (acute) health hazard Sudden release of pressure hazard

Ethane (74-84-0)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

15.2. International regulations

CANADA

No additional information available

EU-Regulations

No additional information available

Classification according to Regulation (EC) No. 1272/2008 [CLP]

Classification according to Directive 67/548/EEC or 1999/45/EC

Not classified

15.2.2. National regulations

No additional information available

15.3. US State regulations

U.S. - California - Aerosol Coating Product Emissions - Maximum Incremental Reactivity (MIR) Values	Material List - Groundwater Reportable Concentration - Reporting Category 1	U.S. - Nevada - Hazardous Materials - Threshold Quantities
U.S. - California - Occupational Exposure Limits - PELs	U.S. - Massachusetts - Oil & Hazardous Material List - Groundwater Reportable Concentration - Reporting Category 2	U.S. - Nevada - Hazardous Materials - Two Release Quantities
U.S. - Connecticut - Hazardous Air Pollutants - HLVs (30 min)	U.S. - Massachusetts - Oil & Hazardous Material List - Reportable Quantity	U.S. - New Jersey - Discharge Prevention - List of Hazardous Substances
U.S. - Connecticut - Hazardous Air Pollutants - HLVs (8 hr)	U.S. - Massachusetts - Oil & Hazardous Material List - Soil Reportable Concentration - Reporting Category 1	U.S. - New Jersey - Environmental Hazardous Substances List
U.S. - Connecticut - Occupational Exposure Limits - TWAs	U.S. - Massachusetts - Oil & Hazardous Material List - Soil Reportable Concentration - Reporting Cat 2	U.S. - New Jersey - Right to Know Hazardous Substance List
U.S. - Delaware - Accidental Release Prevention Regulations - Sufficient Quantities	U.S. - Massachusetts - Right To Know List	U.S. - New Jersey - Special Health Hazards Substances List
U.S. - Delaware - Accidental Release Prevention Regulations - Threshold Quantities	U.S. - Michigan - Occupational Exposure Limits - TWAs	U.S. - New Jersey - TCPA - Extraordinarily Hazardous Substances (EHS)
U.S. - Delaware - Pollutant Discharge Requirements - Reportable Quantities	U.S. - Minnesota - Hazardous Substance List	U.S. - New York - Occupational Exposure Limits - TWAs
U.S. - Idaho - Occupational Exposure Limits - TWAs	U.S. - Minnesota - Permissible Exposure Limits - TWAs	U.S. - Ohio - Accidental Release Prevention - Threshold Quantities
U.S. - Massachusetts - Oil & Hazardous	U.S. - Nevada - Hazardous Materials - Classification of Endpoints	U.S. - Oregon - Permissible Exposure Limits - TWAs
		U.S. - Pennsylvania - RTK (Right to Know) List

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U.S. - Tennessee - Occupational Exposure Limits - TWAs
U.S. - Texas - Effects Screening Levels - Long Term

U.S. - Texas - Effects Screening Levels - Short Term
U.S. - Vermont - Permissible Exposure Limits - TWAs

U.S. - Washington - Permissible Exposure Limits - STELs
U.S. - Washington - Permissible Exposure Limits - TWAs

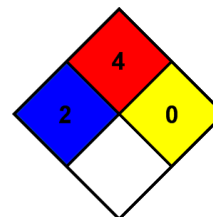
SECTION 16: Other information

Revision date : 7/1/2023
Data sources : ChemADVISOR, Inc.[<https://www.chemadvisor.com>].
Other information : None.

Full text of H-phrases: see section 16:

Compressed gas	Gases under pressure Compressed gas
Flam. Gas 1	Flammable gases, Category 1
Refrigerated liquefied gas	Gases under pressure Refrigerated liquefied gas
H220	Extremely flammable gas
H280	Contains gas under pressure; may explode if heated
H281	Contains refrigerated gas; may cause cryogenic burns or injury

NFPA health hazard : 2 - Intense or continued exposure could cause temporary incapacitation or possible residual injury unless prompt medical attention is given.
NFPA fire hazard : 4 - Will rapidly or completely vaporize at normal pressure and temperature, or is readily dispersed in air and will burn readily.
NFPA reactivity : 0 - Normally stable, even under fire exposure conditions, and are not reactive with water.



HMIS III Rating

Health : 2 Moderate Hazard - Temporary or minor injury may occur
Flammability : 4 Severe Hazard
Physical : 0 Minimal Hazard
Personal Protection : H

SDS US (GHS HazCom 2012)

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product