

SAFETY DATA SHEET

Flammable Liquefied Gas Mixture: 1-Pentanethiol / Butyl Mercaptan / Ethyl Mercaptan / Methyl Mercaptan / N-Propyl Mercaptan / Propane

Section 1. Identification

GHS product identifier	: Flammable Liquefied Gas Mixture: 1-Pentanethiol / Butyl Mercaptan / Ethyl Mercaptan / Methyl Mercaptan / N-Propyl Mercaptan / Propane
Other means of identification	: Not available.
Product use	: Synthetic/Analytical chemistry.
SDS #	: 019933
Supplier's details	: Airgas USA, LLC and its affiliates 259 North Radnor-Chester Road Suite 100 Radnor, PA 19087-5283 1-610-687-5253
24-hour telephone	: 1-866-734-3438

Section 2. Hazards identification

OSHA/HCS status	: This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).
Classification of the substance or mixture	: FLAMMABLE GASES - Category 1 GASES UNDER PRESSURE - Liquefied gas

GHS label elements

Hazard pictograms



Signal word

: Danger

Hazard statements

: Extremely flammable gas.
Contains gas under pressure; may explode if heated.
May cause frostbite.
May form explosive mixtures in Air.

Precautionary statements

General

: Read and follow all Safety Data Sheets (SDS'S) before use. Read label before use. Keep out of reach of children. If medical advice is needed, have product container or label at hand. Close valve after each use and when empty. Use equipment rated for cylinder pressure. Do not open valve until connected to equipment prepared for use. Use a back flow preventative device in the piping. Use only equipment of compatible materials of construction. Always keep container in upright position. Approach suspected leak area with caution.

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. Eliminate all ignition sources if safe to do so.

Storage

: Protect from sunlight when ambient temperature exceeds 52°C/125°F. Store in a well-ventilated place.

Disposal

: Not applicable.

Hazards not otherwise classified

: Liquid can cause burns similar to frostbite.

Section 3. Composition/information on ingredients

Substance/mixture : Mixture
Other means of identification : Not available.

CAS number/other identifiers

CAS number : Not applicable.
Product code : 019933

Ingredient name	%	CAS number
Propane	99	74-98-6
pentane-1-thiol	0.0001 - 0.0999	110-66-7
n-Propyl Mercaptan	0.0001 - 0.0999	107-03-9
Methyl Mercaptan	0.0001 - 0.0999	74-93-1
Ethyl Mercaptan	0.0001 - 0.0999	75-08-1
Butyl Mercaptan	0.0001 - 0.0999	109-79-5

Any concentration shown as a range is to protect confidentiality or is due to batch variation.

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.

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. In case of contact with liquid, warm frozen tissues slowly with lukewarm water and get medical attention. Do not rub affected area. Wash clothing before reuse. Clean shoes thoroughly before reuse.
- Ingestion** : Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if adverse health effects persist or are severe. Ingestion of liquid can cause burns similar to frostbite. If frostbite occurs, get medical attention. Never give anything by mouth to an unconscious person. 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. As this product rapidly becomes a gas when released, refer to the inhalation section.

Most important symptoms/effects, acute and delayed

Potential acute health effects

- Eye contact** : Liquid can cause burns similar to frostbite.
- Inhalation** : No known significant effects or critical hazards.
- Skin contact** : Dermal contact with rapidly evaporating liquid could result in freezing of the tissues or frostbite.
- Frostbite** : Try to warm up the frozen tissues and seek medical attention.
- Ingestion** : Ingestion of liquid can cause burns similar to frostbite.

Over-exposure signs/symptoms

Section 4. First aid measures

Eye contact	: Adverse symptoms may include the following:, frostbite
Inhalation	: No specific data.
Skin contact	: Adverse symptoms may include the following:, frostbite
Ingestion	: Adverse symptoms may include the following:, frostbite

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.
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.
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Hazardous thermal decomposition products	: Decomposition products may include the following materials: carbon dioxide carbon monoxide
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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.
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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. For incidents involving large quantities, thermally insulated undergarments and thick textile or leather gloves should be worn.
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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. Do not touch or walk through spilled material. 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 specialised 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".

Section 6. Accidental release measures

Environmental precautions : Ensure emergency procedures to deal with accidental gas releases are in place to avoid contamination of the environment. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. 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 7. Handling and storage

Precautions for safe handling

Protective measures : Put on appropriate personal protective equipment (see Section 8). Contains gas under pressure. Do not get in eyes or on skin or 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. Use equipment rated for cylinder pressure. Close valve after each use and when empty. Protect cylinders from physical damage; do not drag, roll, slide, or drop. Use a suitable hand truck for cylinder movement.

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. Cylinders should be stored upright, with valve protection cap in place, and firmly secured to prevent falling or being knocked over. Cylinder temperatures should not exceed 52 °C (125 °F).

Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

Ingredient name	Exposure limits
Propane	NIOSH REL (United States, 10/2013). TWA: 1800 mg/m ³ 10 hours. TWA: 1000 ppm 10 hours. OSHA PEL (United States, 6/2016). TWA: 1800 mg/m ³ 8 hours. TWA: 1000 ppm 8 hours. OSHA PEL 1989 (United States, 3/1989). TWA: 1800 mg/m ³ 8 hours. TWA: 1000 ppm 8 hours.
pentane-1-thiol	NIOSH REL (United States, 10/2013). CEIL: 0.5 ppm 15 minutes. CEIL: 2.1 mg/m ³ 15 minutes.
n-Propyl Mercaptan	NIOSH REL (United States, 10/2013). CEIL: 1.6 mg/m ³ 15 minutes. CEIL: 0.5 ppm 15 minutes.
Methyl Mercaptan	ACGIH TLV (United States, 3/2016).

Section 8. Exposure controls/personal protection

Ethyl Mercaptan	<p>TWA: 0.98 mg/m³ 8 hours. TWA: 0.5 ppm 8 hours. NIOSH REL (United States, 10/2013). CEIL: 1 mg/m³ 15 minutes. CEIL: 0.5 ppm 15 minutes. OSHA PEL (United States, 6/2016). CEIL: 20 mg/m³ CEIL: 10 ppm OSHA PEL 1989 (United States, 3/1989). TWA: 1 mg/m³ 8 hours. TWA: 0.5 ppm 8 hours. ACGIH TLV (United States, 3/2016). TWA: 1.3 mg/m³ 8 hours. TWA: 0.5 ppm 8 hours. NIOSH REL (United States, 10/2013). CEIL: 1.3 mg/m³ 15 minutes. CEIL: 0.5 ppm 15 minutes. OSHA PEL (United States, 6/2016). CEIL: 25 mg/m³ CEIL: 10 ppm OSHA PEL 1989 (United States, 3/1989). TWA: 1 mg/m³ 8 hours. TWA: 0.5 ppm 8 hours. ACGIH TLV (United States, 3/2016). TWA: 1.8 mg/m³ 8 hours. TWA: 0.5 ppm 8 hours. NIOSH REL (United States, 10/2013). CEIL: 1.8 mg/m³ 15 minutes. CEIL: 0.5 ppm 15 minutes. OSHA PEL (United States, 6/2016). TWA: 35 mg/m³ 8 hours. TWA: 10 ppm 8 hours. OSHA PEL 1989 (United States, 3/1989). TWA: 1.5 mg/m³ 8 hours. TWA: 0.5 ppm 8 hours.</p>
Butyl Mercaptan	<p>TWA: 0.98 mg/m³ 8 hours. TWA: 0.5 ppm 8 hours. NIOSH REL (United States, 10/2013). CEIL: 1 mg/m³ 15 minutes. CEIL: 0.5 ppm 15 minutes. OSHA PEL (United States, 6/2016). CEIL: 20 mg/m³ CEIL: 10 ppm OSHA PEL 1989 (United States, 3/1989). TWA: 1 mg/m³ 8 hours. TWA: 0.5 ppm 8 hours. ACGIH TLV (United States, 3/2016). TWA: 1.3 mg/m³ 8 hours. TWA: 0.5 ppm 8 hours. NIOSH REL (United States, 10/2013). CEIL: 1.3 mg/m³ 15 minutes. CEIL: 0.5 ppm 15 minutes. OSHA PEL (United States, 6/2016). CEIL: 25 mg/m³ CEIL: 10 ppm OSHA PEL 1989 (United States, 3/1989). TWA: 1 mg/m³ 8 hours. TWA: 0.5 ppm 8 hours. ACGIH TLV (United States, 3/2016). TWA: 1.8 mg/m³ 8 hours. TWA: 0.5 ppm 8 hours. NIOSH REL (United States, 10/2013). CEIL: 1.8 mg/m³ 15 minutes. CEIL: 0.5 ppm 15 minutes. OSHA PEL (United States, 6/2016). TWA: 35 mg/m³ 8 hours. TWA: 10 ppm 8 hours. OSHA PEL 1989 (United States, 3/1989). TWA: 1.5 mg/m³ 8 hours. TWA: 0.5 ppm 8 hours.</p>

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.

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. If contact with the liquid is possible, insulated gloves suitable for low temperatures should be worn. 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.
- 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** : Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. 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.

Section 9. Physical and chemical properties

Appearance

- Physical state** : Gas. [Liquefied gas]
- Color** : Not available.
- Melting/freezing point** : -187.6°C (-305.7°F) This is based on data for the following ingredient: propane.
- Critical temperature** : Lowest known value: 96.55°C (205.8°F) (propane).
- Odor** : Not available.
- Odor threshold** : Not available.
- pH** : Not available.
- Flash point** : Not available.
- Burning time** : Not applicable.
- Burning rate** : Not applicable.
- Evaporation rate** : Not available.
- Flammability (solid, gas)** : Not available.
- Lower and upper explosive (flammable) limits** : Not available.
- Vapor pressure** : Not available.
- Vapor density** : Highest known value: 1.6 (Air = 1) (propane).
- Gas Density (lb/ft³)** : Only known value: 0.116 (propane).
- Relative density** : Not applicable.
- Solubility** : Not available.
- Solubility in water** : Not available.
- Partition coefficient: n-octanol/water** : Not available.
- Auto-ignition temperature** : Not available.
- Decomposition temperature** : Not available.
- SADT** : Not available.
- Viscosity** : Not applicable.

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** : Oxidizers
- Hazardous decomposition products** : Under normal conditions of storage and use, hazardous decomposition products should not be produced.
- Hazardous polymerization** : Under normal conditions of storage and use, hazardous polymerization will not occur.

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
n-Propyl Mercaptan	LC50 Inhalation Gas.	Rat	14600 ppm	1 hours
	LC50 Inhalation Gas.	Rat	7300 ppm	4 hours
	LD50 Oral	Rat	1790 mg/kg	-
Methyl Mercaptan	LC50 Inhalation Gas.	Rat	1350 ppm	1 hours
Ethyl Mercaptan	LC50 Inhalation Gas.	Rat	8840 ppm	1 hours
	LC50 Inhalation Gas.	Rat	4420 ppm	4 hours
	LD50 Oral	Rat	682 mg/kg	-
Butyl Mercaptan	LC50 Inhalation Gas.	Rat	8040 ppm	1 hours
	LC50 Inhalation Gas.	Rat	4020 ppm	4 hours
	LD50 Oral	Rat	1500 mg/kg	-

Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Exposure	Observation
n-Propyl Mercaptan Ethyl Mercaptan	Eyes - Severe irritant	Rabbit	-	83 milligrams	-
	Eyes - Moderate irritant	Rabbit	-	24 hours 100 milligrams	-
	Skin - Mild irritant	Rabbit	-	24 hours 500 milligrams	-

Sensitization

Not available.

Mutagenicity

Not available.

Carcinogenicity

Not available.

Reproductive toxicity

Not available.

Teratogenicity

Not available.

Specific target organ toxicity (single exposure)

Section 11. Toxicological information

Not available.

Specific target organ toxicity (repeated exposure)

Not available.

Aspiration hazard

Not available.

Information on the likely routes of exposure : Not available.

Potential acute health effects

- Eye contact** : Liquid can cause burns similar to frostbite.
- Inhalation** : No known significant effects or critical hazards.
- Skin contact** : Dermal contact with rapidly evaporating liquid could result in freezing of the tissues or frostbite.
- Ingestion** : Ingestion of liquid can cause burns similar to frostbite.

Symptoms related to the physical, chemical and toxicological characteristics

- Eye contact** : Adverse symptoms may include the following:, frostbite
- Inhalation** : No specific data.
- Skin contact** : Adverse symptoms may include the following:, frostbite
- Ingestion** : Adverse symptoms may include the following:, frostbite

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.

- 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 12. Ecological information

Toxicity

Product/ingredient name	Result	Species	Exposure
n-Propyl Mercaptan	Acute LC50 60 to 100 µg/l Fresh water	Daphnia - Daphnia magna	48 hours
Ethyl Mercaptan	Acute LC50 170 to 280 µg/l Fresh water	Daphnia - Daphnia magna	48 hours
Butyl Mercaptan	Acute EC50 1068300 µg/l Fresh water	Algae - Pseudokirchneriella subcapitata	96 hours
	Acute LC50 1100000 µg/l Fresh water	Fish - Ictalurus punctatus - Yearling	96 hours

Persistence and degradability

Not available.

Bioaccumulative potential

Product/ingredient name	LogP _{ow}	BCF	Potential
Propane	1.09	-	low
n-Propyl Mercaptan	1.81	-	low
Methyl Mercaptan	0.78	-	low
Ethyl Mercaptan	1.5	-	low
Butyl Mercaptan	2.28	-	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 Airgas-owned pressure vessels should be returned to Airgas. 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

	DOT	TDG	Mexico	IMDG	IATA
UN number	UN3161	UN3161	UN3161	UN3161	UN3161
UN proper shipping name	Liquefied gas, flammable n.o.s. (Ethyl Mercaptan, Propane)	Liquefied gas, flammable n.o.s. (Ethyl Mercaptan, Propane)	Liquefied gas, flammable n.o.s. (Ethyl Mercaptan, Propane)	Liquefied gas, flammable n.o.s. (Ethyl Mercaptan, Propane)	Liquefied gas, flammable n.o.s. (Ethyl Mercaptan, Propane)
Transport hazard class(es)	2.1 	2.1 	2.1 	2.1 	2.1 
Packing group	-	-	-	-	-
Environment	No.	No.	No.	No.	No.

Section 14. Transport information

Additional information	-	Product classified as per the following sections of the Transportation of Dangerous Goods Regulations: 2.13-2.17 (Class 2). <u>Explosive Limit and Limited Quantity Index</u> 0.125 <u>ERAP Index</u> 3000 <u>Passenger Carrying Ship Index</u> Forbidden <u>Passenger Carrying Road or Rail Index</u> Forbidden	-	-	-
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“Refer to CFR 49 (or authority having jurisdiction) to determine the information required for shipment of the product.”

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 II of MARPOL 73/78 and the IBC Code : Not available.

Section 15. Regulatory information

U.S. Federal regulations : **TSCA 4(a) final test rules:** Methyl Mercaptan
TSCA 8(a) CDR Exempt/Partial exemption: Not determined
United States inventory (TSCA 8b): All components are listed or exempted.
Clean Water Act (CWA) 311: Methyl Mercaptan
Clean Air Act (CAA) 112 regulated flammable substances: propane

Clean Air Act Section 112 (b) Hazardous Air Pollutants (HAPs) : Not listed

Clean Air Act Section 602 Class I Substances : Not listed

Clean Air Act Section 602 Class II Substances : Not listed

DEA List I Chemicals (Precursor Chemicals) : Not listed

DEA List II Chemicals (Essential Chemicals) : Not listed

SARA 302/304

Composition/information on ingredients

Name	%	EHS	SARA 302 TPQ		SARA 304 RQ	
			(lbs)	(gallons)	(lbs)	(gallons)
Methyl Mercaptan	0.0001 - 0.0999	Yes.	500	-	100	-

SARA 304 RQ : 100100.1 lbs / 45445.4 kg

SARA 311/312

Section 15. Regulatory information

Classification : Fire hazard
Sudden release of pressure

Composition/information on ingredients

Name	%	Fire hazard	Sudden release of pressure	Reactive	Immediate (acute) health hazard	Delayed (chronic) health hazard
Propane	99	Yes.	Yes.	No.	No.	No.
pentane-1-thiol	0.0001 - 0.0999	Yes.	No.	No.	No.	No.
n-Propyl Mercaptan	0.0001 - 0.0999	Yes.	No.	No.	Yes.	No.
Methyl Mercaptan	0.0001 - 0.0999	Yes.	Yes.	No.	Yes.	No.
Ethyl Mercaptan	0.0001 - 0.0999	Yes.	No.	No.	Yes.	No.
Butyl Mercaptan	0.0001 - 0.0999	Yes.	No.	No.	Yes.	No.

State regulations

Massachusetts : The following components are listed: PROPANE
New York : None of the components are listed.
New Jersey : The following components are listed: PROPANE
Pennsylvania : The following components are listed: PROPANE

International regulations

International lists

National inventory

Australia : All components are listed or exempted.
Canada : At least one component is not listed in DSL but all such components are listed in NDSL.
China : All components are listed or exempted.
Europe : All components are listed or exempted.
Japan : 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 : Not determined.
Taiwan : All components are listed or exempted.

Canada

WHMIS (Canada) : Class A: Compressed gas.
Class B-1: Flammable gas.
CEPA Toxic substances: None of the components are listed.
Canadian ARET: None of the components are listed.
Canadian NPRI: The following components are listed: Propane
Alberta Designated Substances: None of the components are listed.
Ontario Designated Substances: None of the components are listed.
Quebec Designated Substances: None of the components are listed.

Section 16. Other information

Canada Label requirements : Class A: Compressed gas.
Class B-1: Flammable gas.

Hazardous Material Information System (U.S.A.)

Health	1
Flammability	4
Physical hazards	3

Section 16. Other information

Caution: HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. Although HMIS® ratings are not required on SDSs under 29 CFR 1910.1200, the preparer may choose to provide them. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered mark of the National Paint & Coatings Association (NPCA). HMIS® materials may be purchased exclusively from J. J. Keller (800) 327-6868.

The customer is responsible for determining the PPE code for this material.

National Fire Protection Association (U.S.A.)



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Copyright ©2001, National Fire Protection Association, Quincy, MA 02269. This warning system is intended to be interpreted and applied only by properly trained individuals to identify fire, health and reactivity hazards of chemicals. The user is referred to certain limited number of chemicals with recommended classifications in NFPA 49 and NFPA 325, which would be used as a guideline only. Whether the chemicals are classified by NFPA or not, anyone using the 704 systems to classify chemicals does so at their own risk.

Procedure used to derive the classification

Classification	Justification
Flam. Gas 1, H220 Press. Gas Liq. Gas, H280	On basis of test data On basis of test data

History

Date of printing : 2/17/2017

Date of issue/Date of revision : 2/17/2017

Date of previous issue : No previous validation

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 = Intermediate Bulk Container
- IMDG = International Maritime Dangerous Goods
- LogPow = logarithm of the octanol/water partition coefficient
- MARPOL 73/78 = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)
- UN = United Nations

References : Not available.

Indicates information that has changed from previously issued version.

Notice to reader

To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein.

Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.