

**AIR LIQUIDE**

# MATERIAL SAFETY DATA SHEET

Prepared to U.S. OSHA, CMA, ANSI and Canadian WHMIS Standards

## 1. PRODUCT IDENTIFICATION

**CHEMICAL NAME; CLASS: PROPANE****SYNONYMS:** Dimethylmethane, LP-Gas, Liquefied Petroleum Gas (LPG)**CHEMICAL FAMILY:** Alkane (hydrocarbon)**FORMULA:** C<sub>3</sub>H<sub>8</sub>**PRODUCT USE:**

Document Number: 10076

For fuel and synthetic chemical use; food additive, agricultural uses, aerosol propellant, refrigerant.

**MANUFACTURED/SUPPLIED FOR:****ADDRESS:**9101-LBJ-FREEWAY, SUITE-800  
DALLAS, TX-75243**EMERGENCY PHONE:**

CHEMTREC: 1-800-424-9300

**BUSINESS PHONE:**

General MSDS Information: 1-972-301-5200

Fax on Demand: 1-800/231-1366

## 2. COMPOSITION and INFORMATION ON INGREDIENTS

CHEMICAL NAME	CAS #	mole %	EXPOSURE LIMITS IN AIR					OTHER
			ACGIH		OSHA			
			TLV ppm	STEL ppm	PEL ppm	STEL ppm	IDLH ppm	
Propane	74-98-6	> 96%	Simple Asphyxiant	NE	1000	NE	2100	NIOSH REL: 1000 ppm DFG MAK: 1000 ppm
Maximum Impurities		< 4.0%	None of the trace impurities in Propane contribute significantly to the hazards associated with the product. All hazard information pertinent to Propane has been provided in this Material Safety Data Sheet, per the requirements of the OSHA Hazard Communication Standard (29 CFR 1910.1200) and State equivalents standards.					

NE = Not Established

C = Ceiling Limit

NOTE: all WHMIS required information is included. It is located in appropriate sections based on the ANSI Z400.1-1993 format.

### 3. HAZARD IDENTIFICATION

**EMERGENCY OVERVIEW:** Propane is a colorless, liquefied, flammable gas with a natural gas odor, which rapidly turns into a gas at standard atmospheric temperature and pressure. Both the liquid and gas pose a serious fire hazard when accidentally released. The gas is heavier than air, and may spread long distances. Distant ignition and flashback are possible. Rapid evaporation of liquid from cylinder may cause frostbite. Flame or high temperature impinging on a localized area of the cylinder of Propane can cause the cylinder to burst or rupture without activating the cylinder's relief devices. Propane is an asphyxiant and presents a significant health hazard by displacing the oxygen in the atmosphere. Provide adequate fire protection during emergency response situations.

**SYMPTOMS OF OVER-EXPOSURE BY ROUTE OF EXPOSURE:** The most significant route of over-exposure for Propane is by inhalation.

**INHALATION:** At high concentrations, Propane can act as a narcotic. High concentrations of this gas can cause an oxygen-deficient environment. It should be noted that before suffocation could occur, the lower flammability limit of propane in air would be exceeded; possibly causing an oxygen-deficient and explosive atmosphere. Individuals breathing an oxygen deficient atmosphere may experience symptoms which include headaches, ringing in ears, dizziness, drowsiness, unconsciousness, nausea, vomiting, and depression of all the senses. Under some circumstances of over-exposure, death may occur. The following effects associated with various levels of oxygen are as follows:

<u>CONCENTRATION</u>	<u>SYMPTOM OF EXPOSURE</u>
12-16% Oxygen:	Breathing and pulse rate increased, muscular coordination slightly disturbed.
10-14% Oxygen:	Emotional upset, abnormal fatigue, disturbed respiration.
6-10% Oxygen:	Nausea and vomiting, collapse or loss of consciousness.
Below 6%:	Convulsive movements, possible respiratory collapse, and death.

HAZARDOUS MATERIAL INFORMATION SYSTEM			
HEALTH		(BLUE)	1
FLAMMABILITY		(RED)	4
REACTIVITY		(YELLOW)	0
PROTECTIVE EQUIPMENT			B
EYES	RESPIRATORY	HANDS	BODY
See Section 8			
For routine industrial applications			

**HEALTH EFFECTS OR RISKS FROM EXPOSURE: An Explanation in Lay Terms.** Over-exposure to this gas mixture may cause the following health effects:

**ACUTE:** The most significant hazard associated with Propane is inhalation of oxygen-deficient atmospheres. Symptoms of oxygen deficiency include respiratory difficulty, ringing in ears, headaches, shortness of breath, wheezing, headache, dizziness, indigestion, nausea, and, at high concentrations, unconsciousness or death may occur. The skin of a victim of over-exposure may have a blue color.

**CHRONIC:** There are currently no known adverse health effects associated with chronic exposure to the components of this compressed gas.

**TARGET ORGANS:** Respiratory system.

### 4. FIRST-AID MEASURES

**RESCUERS SHOULD NOT ATTEMPT TO RETRIEVE VICTIMS OF EXPOSURE TO PROPANE WITHOUT ADEQUATE PERSONAL PROTECTIVE EQUIPMENT. At a minimum, Self-Contained Breathing Apparatus and Fire-Retardant Personal Protective equipment should be worn. Adequate fire protection must be provided during rescue situations.**

Remove victim(s) to fresh air, as quickly as possible. Only trained personnel should administer supplemental oxygen and/or cardio-pulmonary resuscitation, if necessary.

## 4. FIRST-AID MEASURES (Continued)

**SKIN EXPOSURE:** Remove any clothing that may restrict circulation to any frozen area. Do not rub frozen parts as tissue damage may occur. As soon as practicable, place any affected area in warm water bath which has a temperature that does not exceed 105°F (40°C). NEVER USE HOT WATER. NEVER USE DRY HEAT. If area of frostbite is extensive, and if possible, remove clothing while showering with warm water. If warm water is not available, or is impractical to use, wrap the affected parts gently in blankets. Alternatively, if the fingers or hands are frostbitten, place the affected area of the body in the armpit. Encourage victim to gently exercise the affected part while being warmed. Seek immediate medical attention.

Frozen tissue is painless and appears waxy, with a possible yellow color. Frozen tissue will become swollen, painful and prone to infection when thawed. If the frozen part of the body has been thawed by the time medical attention has been obtained, cover the area with a dry sterile dressing and a large bulky protective covering.

**EYE EXPOSURE:** If liquid is splashed into eyes, or if irritation of the eye develops after exposure to liquid or gas, open victim's eyes while under gentle running water. Use sufficient force to open eyelids. Have victim "roll" eyes. Minimum flushing is for 15 minutes. Seek medical assistance immediately, preferably an ophthalmologist.

Victim(s) must be taken for medical attention. Rescuers should be taken for medical attention, if necessary. Take copy of label and MSDS to physician or other health professional with victim(s).

## 5. FIRE-FIGHTING MEASURES

**FLASH POINT, (Closed Cup):** -104°C (-156°F)

**AUTOIGNITION TEMPERATURE:** 450°C (842°F)

**FLAMMABLE LIMITS (in air by volume, %):**

Lower (LEL): 2.2%

Upper (UEL): 9.5%

**FIRE EXTINGUISHING MATERIALS:** Extinguish Propane fires by shutting-off the source of the gas. Use water spray to cool fire-exposed containers, structures, and equipment.

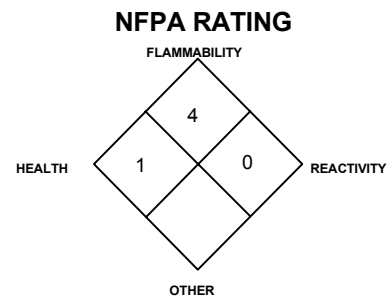
**UNUSUAL FIRE AND EXPLOSION HAZARDS:** When involved in a fire, this material may decompose and produce toxic gases including carbon monoxide and carbon dioxide. Propane is heavier than air and vapors can travel long distances to an ignition source and flashback.

**DANGER!** Fires impinging (direct flame) on the outside surface of unprotected cylinders of Propane can be very dangerous. Exposure to fire could cause a catastrophic failure of the cylinder releasing the contents into a fireball and explosion of released gas. The resulting fire and explosion can result in severe equipment damage and personnel injury or death over a large area around the cylinder. For massive fires in large areas, use unmanned hose holder or monitor nozzles; if this is not possible, withdraw from area and allow fire to burn.

Explosion Sensitivity to Mechanical Impact: Not sensitive.

Explosion Sensitivity to Static Discharge: Static discharge may cause Propane to ignite explosively, if released.

**SPECIAL FIRE-FIGHTING PROCEDURES:** Structural fire-fighters must wear Self-Contained Breathing Apparatus and full protective equipment. The best fire-fighting technique may be simply to let the burning gas escape. Stop the leak before extinguishing the fire. If the fire is extinguished before the fire is stopped, and because of the potential for a BLEVE, evacuation of non-emergency personnel is essential. If water is not available for cooling or protection of cylinder exposures, evacuate the area. The North American Emergency Response Guidebook (Guide #115) recommends 0.5 miles. Other information for pre-planning can be found in the American Petroleum Institute Publications 2510 and 2510A.



## 6. ACCIDENTAL RELEASE MEASURES

**LEAK RESPONSE:** Evacuate immediate area. Uncontrolled releases should be responded to by trained personnel using pre-planned procedures. Proper protective equipment should be used. In case of a gas release, clear the affected area, protect people, and respond with trained personnel.

Eliminate any possible sources of ignition, and provide maximum explosion-proof ventilation. If the gas is leaking from cylinder or valve, contact the supplier. Adequate fire protection must be provided. Use only non-sparking tools and equipment during the response.

## 6. ACCIDENTAL RELEASE MEASURES

Minimum Personal Protective Equipment should be **Level B: fire-retardant protective clothing, gloves and Self-Contained Breathing Apparatus**. Use only non-sparking tools and equipment. Locate and seal the source of the leaking gas. Protect personnel attempting the shut-off with water-spray. Allow the gas to dissipate. Combustible gas concentration must be below 10% of the LEL (2.2%) prior to entry. Monitor the surrounding area for combustible gas levels and oxygen level. The atmosphere must have at least 19.5 percent oxygen before personnel can be allowed in the area without Self-Contained Breathing Apparatus. Attempt to close the main source valve prior to entering the area. If this does not stop the release (or if it is not possible to reach the valve), allow the gas to release in-place or remove it to a safe area and allow the gas to be released there.

**THIS IS AN EXTREMELY FLAMMABLE GAS.** Protection of all personnel and the area must be maintained.

## 7. HANDLING and USE

**WORK PRACTICES AND HYGIENE PRACTICES:** Be aware of any signs of dizziness or fatigue; exposures to fatal concentrations of Propane could occur without any significant warning symptoms. Non-sparking tools should be used.

**STORAGE AND HANDLING PRACTICES:** Specific requirements are listed in NFPA 58. Cylinders should be stored upright (with valve-protection cap in place) and firmly secured to prevent falling or being knocked over. Cylinders can be stored in the open, but in such cases, should be protected against extremes of weather and from the dampness of the ground to prevent rusting. Cylinders should be stored in dry, well-ventilated areas away from sources of heat, ignition and direct sunlight. Keep storage area clear of materials which can burn. Do not allow area where cylinders are stored to exceed 52 °C (125 °F). Store containers away from heavily trafficked areas and emergency exits. Store away from process and production areas, away from elevators, building and room exits or main aisles leading to exits. Protect cylinders against physical damage.

Cylinders should be separated from oxygen cylinders, or other oxidizers, by a minimum distance of 20 ft., or by a barrier of non-combustible material at least 5 ft. high, having a fire-resistance rating of at least 0.5 hours. Isolate from other incompatible chemicals (refer to Section 10, Stability and Reactivity).

Storage areas must meet national electrical codes for Class 1 Hazardous Areas. Post "No Smoking or Open Flames" signs in storage or use areas. Consider installation of leak detection and alarm for storage and use areas. Have appropriate extinguishing equipment in the storage area (i.e. sprinkler system, portable fire extinguishers).

Keep the smallest amount on-site as is necessary. Full and empty cylinders should be segregated. Use a first-in, first-out inventory system to prevent full containers from being stored for long periods of time.

Use non-sparking ventilation systems, approved explosion-proof equipment, and appropriate electrical systems. Electrical equipment used in gas-handling operations, or located in storage areas, should be non-sparking or explosion proof. Use a check valve in the discharge line to prevent hazardous backflow. Never tamper with pressure relief devices in valves and cylinders.

**SPECIAL PRECAUTIONS FOR HANDLING GAS CYLINDERS:** Compressed gases can present significant safety hazards. The following rules are applicable to work situations in which cylinders are being used:

**Before Use:** Move cylinders with a suitable hand-truck. Do not drag, slide or roll cylinders. Do not drop cylinders or permit them to strike each other. Secure cylinders firmly. Leave the valve protection cap (where provided) in-place until cylinder is ready for use.

**During Use:** Use designated CGA fittings and other support equipment. Do not use adapters. Use piping and equipment adequately designed to withstand pressures to be encountered. Do not heat cylinder by any means to increase the discharge rate of the product from the cylinder. Do not use oils or grease on gas-handling fittings or equipment. Do not "crack" valve open before connecting it, since self-ignition may occur. Leak check system with leak detection solution, never with flame. Immediately contact the supplier if there are any difficulties associated with operating cylinder valve. Never insert an object (e.g. wrench, screwdriver, pry bar, etc.) into valve cap openings. Doing so may damage valve, causing a leak to occur. Use an adjustable strap wrench to remove over-tight or rusted caps. Never strike an arc on a compressed gas cylinder or make a cylinder part of an electric circuit.

**After Use:** Close main cylinder valve. Valves should be closed tightly. Replace valve protection cap. Mark empty cylinders "EMPTY".

**NOTE:** Use only DOT or ASME code containers designed for flammable gas storage. Earth-ground and bond all lines and equipment associated with Propane. Close valve after each use and when empty.

## 7. HANDLING and USE (Continued)

**STANDARD VALVE CONNECTIONS FOR U.S. AND CANADA:** Use the proper connections, DO NOT USE ADAPTERS:

**THREADED:** For Gas Withdrawal - CGA 510  
For Liquid Withdrawal - CGA 555

**PIN-INDEXED YOKE:** Not Applicable.

**ULTRA HIGH INTEGRITY:** Not Applicable.

**PROTECTIVE PRACTICES DURING MAINTENANCE OF CONTAMINATED EQUIPMENT:** Follow practices indicated in Section 6 (Accidental Release Measures). Make certain application equipment is locked and tagged-out safely. Purge gas handling equipment with inert gas (i.e. nitrogen) before attempting repairs. Always use product in areas where adequate ventilation is provided.

## 8. EXPOSURE CONTROLS - PERSONAL PROTECTION

**VENTILATION AND ENGINEERING CONTROLS:** Use with adequate ventilation. Provide natural or explosion-proof ventilation adequate to ensure Propane does not reach its lower flammability limit of 2.2%. Local exhaust ventilation is preferred, because it prevents gas dispersion into the work place by eliminating it at its source. If appropriate, install automatic monitoring equipment to detect the level of flammable gas.

**RESPIRATORY PROTECTION:** Maintain oxygen levels above 19.5% in the workplace. Use supplied air respiratory protection if oxygen levels are below 19.5% (air-purifying respirators will not function) or during emergency response to a release of Propane. During an emergency situation, before entering the area, check for flammable gas level as well as oxygen-deficient atmospheres. If respiratory protection is required, follow the requirements of the Federal OSHA Respiratory Protection Standard (29 CFR 1910.134), or equivalent State standards.

**EYE PROTECTION:** Safety glasses; faceshield when handling the liquefied product.

**HAND PROTECTION:** Wear leather gloves when handling cylinders of Propane. Otherwise, wear glove protection appropriate to the specific operation for which Propane is used. Use low-temperature protective gloves when working with containers of Liquid Propane.

**BODY PROTECTION:** Use body protection appropriate for task. Cotton clothing is recommended for use to prevent static electric build-up. Safety shoes are recommended when handling cylinders. Transfer of large quantities under pressure may require use of fire retardant clothing.

## 9. PHYSICAL and CHEMICAL PROPERTIES

**GAS DENSITY @ 21.1°C (70°F) and 1 atm:** 0.115 99 lb/ft<sup>3</sup> (1.868 kg/m<sup>3</sup>)

**BOILING POINT:** -42°C (-43.7°F)

**FREEZING/MELTING POINT @ 10 psig:** -187.70°C; -305.9°F

**SPECIFIC GRAVITY (air = 1) @ 21.1°C (70°F):** 1.5223

**pH:** Not applicable.

**SOLUBILITY IN WATER vol/vol at 37.8°C (100°F):** 0.065 **MOLECULAR WEIGHT:** 44.097

**EVAPORATION RATE (nBuAc = 1):** Not applicable.

**EXPANSION RATIO:** Not applicable.

**ODOR THRESHOLD:** 1800 mg/m<sup>3</sup>

**SPECIFIC VOLUME (ft<sup>3</sup>/lb):** 8.7

**VAPOR PRESSURE @ 21.1°C (70°F) psig:** 109.73

**COEFFICIENT WATER/OIL DISTRIBUTION:** Not applicable.

**APPEARANCE AND COLOR:** Colorless gas or liquid. Propane has a faint odor at high concentrations.

**HOW TO DETECT THIS SUBSTANCE (warning properties):** The natural gas odor may be a warning properties. In terms of leak detection, fittings and joints can be painted with a soap solution to detect leaks, which will be indicated by a bubble formation.

## 10. STABILITY and REACTIVITY

**STABILITY:** Stable.

**DECOMPOSITION PRODUCTS:** : When ignited in the presence of oxygen, this gas will burn to produce carbon monoxide, carbon dioxide.

**MATERIALS WITH WHICH SUBSTANCE IS INCOMPATIBLE:** Strong oxidizers (i.e. chlorine, bromine pentafluoride, oxygen, oxygen difluoride, and nitrogen trifluoride).

**HAZARDOUS POLYMERIZATION:** Will not occur.

## 10. STABILITY and REACTIVITY (Continued)

**CONDITIONS TO AVOID:** Contact with incompatible materials and exposure to heat, sparks and other sources of ignition. Cylinders exposed to high temperatures or direct flame can rupture or burst.

## 11. TOXICOLOGICAL INFORMATION

**TOXICITY DATA:** The following information is for pure Propane.

**Skin Contact (Rabbit):** Several formulations containing an isobutane-propane mixture have been tested for skin irritation effects. All formulations contained less than 13% propane. All of the formulations containing propane caused only mild irritation.

**Effects on Short-Term Inhalation:** Guinea-pigs breathing 5.5% propane by volume developed tremors after 5 minutes. Nausea, retching, and stupefaction were observed when animals were exposed for 30-120 minutes. All the animals survived a two-hour exposure and had no significant tissue damage. A gas concentration of 89% did not cause anesthesia, but depressed the blood pressure of cats. Inhalation of 10 percent propane by mice and 15% by dogs caused weak cardiac sensitization. Presumably, all of these effects are reversible when exposure ceases. In primates, 10% propane caused some change in heart function. At 20% there was aggravation of these symptoms and respiratory depression.

**Effects of Long-Term Inhalation:** No toxicity or abnormalities were observed when monkeys were exposed to approximately 750 ppm for 90 days. Similar results were obtained when monkeys were exposed to an aerosol spray containing 65% propane and isobutane.

**SUSPECTED CANCER AGENT:** Propane is not found on the following lists: FEDERAL OSHA Z LIST, NTP, IARC, CAL/OSHA; therefore is not considered to be, nor suspected to be a cancer-causing agent by these agencies.

**IRRITANCY OF PRODUCT:** Propane is not irritating; however, contact with rapidly expanding gases can cause frostbite to exposed tissue.

**SENSITIZATION TO THE PRODUCT:** Propane is not known to cause sensitization in humans; however, some animals studies indicate that exposure to Propane can cause weak cardiac sensitization.

**REPRODUCTIVE TOXICITY INFORMATION:** Listed below is information concerning the effects of Propane on the human reproductive system.

Mutagenicity: No mutagenicity effects have been described for Propane.

Embryotoxicity: No embryotoxic effects have been described for Propane.

Teratogenicity: No teratogenicity effects have been described for this gas Propane.

Reproductive Toxicity: No reproductive toxicity effects have been described for Propane.

A *mutagen* is a chemical which causes permanent changes to genetic material (DNA) such that the changes will propagate through generation lines. An *embryotoxin* is a chemical which causes damage to a developing embryo (i.e. within the first eight weeks of pregnancy in humans), but the damage does not propagate across generational lines. A *teratogen* is a chemical which causes damage to a developing fetus, but the damage does not propagate across generational lines. A *reproductive toxin* is any substance which interferes in any way with the reproductive process.

**MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE:** Acute or chronic respiratory conditions may be aggravated by over-exposure to the components of Propane.

**BIOLOGICAL EXPOSURE INDICES (BEIs):** Currently, Biological Exposure Indices (BEIs) are not applicable for Propane.

**RECOMMENDATIONS TO PHYSICIANS:** Administer oxygen, if necessary; treat symptoms; reduce or eliminate exposure.

## 12. ECOLOGICAL INFORMATION

**ENVIRONMENTAL STABILITY:** This gas will be dissipated rapidly in well-ventilated areas. Propane is utilized and rapidly biodegraded by soil bacteria. Additional environmental data for Propane are available as follows:

**PROPANE:** Log  $K_{ow}$  = 2.36. Water Solubility = 2.62.4 ppm at 25°C. Log BCF = calculated, 1.56 and 1.78, respectively. The bioconcentration in aquatic organisms is not expected to be important.

**EFFECT OF MATERIAL ON PLANTS or ANIMALS:** Any adverse effect on animals would be related to oxygen deficient environments. No adverse effect is anticipated to occur to plant-life.

**EFFECT OF CHEMICAL ON AQUATIC LIFE:** No evidence is currently available on Propane's effects on aquatic life.

### 13. DISPOSAL CONSIDERATIONS

**PREPARING WASTES FOR DISPOSAL:** Waste disposal must be in accordance with appropriate Federal, State, and local regulations. Return cylinders with any residual product to Air Liquide. Do not dispose of locally.

### 14. TRANSPORTATION INFORMATION

**THIS MATERIAL IS HAZARDOUS AS DEFINED BY 49 CFR 172.101 BY THE U.S. DEPARTMENT OF TRANSPORTATION.**

<b>PROPER SHIPPING NAME:</b>	Propane	<b>Alternate Description:</b> Petroleum gases, liquefied
<b>HAZARD CLASS NUMBER and DESCRIPTION:</b>	2.1 (Flammable Gas)	2.1 (Flammable Gas)
<b>UN IDENTIFICATION NUMBER:</b>	UN 1978	UN 1075
<b>PACKING GROUP:</b>	Not applicable.	Not applicable.
<b>DOT LABEL(S) REQUIRED:</b>	Flammable Gas	Flammable Gas
<b>NORTH AMERICAN EMERGENCY RESPONSE GUIDEBOOK NUMBER (1996):</b>	115	

**MARINE POLLUTANT:** Propane is not classified by the DOT as Marine Pollutants (as defined by 49 CFR 172.101, Appendix B).

**SPECIAL SHIPPING INFORMATION:** Cylinders should be transported in a secure position, in a well-ventilated vehicle. The transportation of compressed gas cylinders in automobiles or in closed-body vehicles present serious safety hazards and should be discouraged.

**NOTE:** Shipment of compressed gas cylinders which have not been filled with the owners consent is a violation of Federal law (49 CFR, Part 173.301 (b)).

**TRANSPORT CANADA TRANSPORTATION OF DANGEROUS GOODS REGULATIONS:** THIS MATERIAL IS CONSIDERED AS DANGEROUS GOODS. Use the above information for the preparation of Canadian Shipments.

### 15. REGULATORY INFORMATION

**SARA REPORTING REQUIREMENTS:** Propane is not subject to the reporting requirements of Sections 302, 304 and 313 of Title III of the Superfund Amendments and Reauthorization Act.

**SARA THRESHOLD PLANNING QUANTITY:** Not applicable.

**TSCA INVENTORY STATUS:** Propane is listed on the TSCA Inventory.

**CERCLA REPORTABLE QUANTITY (RQ):** Not applicable.

**OTHER U.S. FEDERAL REGULATIONS:**

- Generally recognized as safe, (GRAS) when used as a propellant, aerating agent and gas, and for a pharmaceutical topical.
- Propane does not contain any Class I or Class II ozone depleting chemicals (40 CFR part 82).
- Propane is subject to the requirements of CFR 29 1910.1000. Propane is listed on Table Z.1.
- Propane is subject to the reporting requirements of Section 112(r) of the Clean Air Act. The Threshold Quantity for of this gas is 10,000 pounds.
- Depending on specific operations involving the use of Propane, the regulations of the Process Safety Management of Highly Hazardous Chemicals may be applicable (29 CFR 1910.119). Under this regulation Propane is not listed in Appendix A, however, any process that involves a flammable gas on-site, in one location, in quantities of 10,000 lbs (4,553 kg) or greater is covered under this regulation unless it is used as a fuel.
- Propane is listed as Regulated Substances in quantities of 10,000 lbs (4,553 kg) or greater, per 40 CFR, Part 68, of the Risk Management for Chemical Accidental Releases.

**OTHER CANADIAN REGULATIONS:** Propane is categorized as a Controlled Product, Hazard Classes A, and B1 as per the Controlled Product Regulations.

## 15. REGULATORY INFORMATION (Continued)

**STATE REGULATORY INFORMATION:** Propane is covered under specific State regulations, as denoted below:

**Alaska - Designated Toxic and Hazardous Substances:** Propane.

**California - Permissible Exposure Limits for Chemical Contaminants:** Propane.

**Florida - Substance List:** No.

**Illinois - Toxic Substance List:** Propane.

**Kansas - Section 302/313 List:** No.

**Massachusetts - Substance List:** Propane.

**Minnesota - List of Hazardous Substances:** Propane.

**Missouri - Employer Information/Toxic Substance List:** Propane.

**New Jersey - Right to Know Hazardous Substance List:** Propane.

**North Dakota - List of Hazardous Chemicals, Reportable Quantities:** No.

**Pennsylvania - Hazardous Substance List:** Propane.

**Rhode Island - Hazardous Substance List:** Propane.

**Texas - Hazardous Substance List:** No.

**West Virginia - Hazardous Substance List:** No.

**Wisconsin - Toxic and Hazardous Substances:** No.

**CALIFORNIA PROPOSITION 65:** Propane is not on the California Proposition 65 lists.

## 16. OTHER INFORMATION

**MIXTURES:** When two or more gases or liquefied gases are mixed, their hazardous properties may combine to create additional, unexpected hazards. Obtain and evaluate the safety information for each component before you produce the mixture. Consult an Industrial Hygienist or other trained person when you make your safety evaluation of the end product. Remember, gases and liquids have properties which can cause serious injury or death.

Further information can be found in the following pamphlets published by: Compressed Gas Association Inc. (CGA), 4221 Walney Road 5<sup>th</sup> floor, Chantilly, VA 20151-2923. Telephone: (703) 788-2700.

- P-1 "Safe Handling of Compressed Gases in Containers"
  - P-14 "Accident Prevention in Oxygen-Rich and Oxygen Deficient Atmospheres"
  - SB-8 "Use of Oxy-fuel Gas Welding and Cutting Apparatus"
  - SB-2 "Oxygen Deficient Atmospheres"
- "Handbook of Compressed Gases"

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This Material Safety Data Sheet is offered pursuant to OSHA's Hazard Communication Standard, 29 CFR, 1910.1200. Other government regulations must be reviewed for applicability to Propane. To the best of Air Liquide's knowledge, the information contained herein is reliable and accurate as of this date; however, accuracy, suitability or completeness are not guaranteed and no warranties of any type, either express or implied, are provided. The information contained herein relates only to this specific product. If Propane is combined with other materials, all component properties must be considered. Data may be changed from time to time. Be sure to consult the latest edition.