Material Safety Data Sheet
Propane

SECTION 01

Chemical Product and Company Identification

Product Name	:	Propane
Supplier	:	EspriGas 500 Northridge Road Suite 120 Atlanta, GA 30350
Product Use	:	Synthetic/Analytical chemistry.
Synonym	:	n-Propane; Dimethylmethane; Freon 290; Liquefied petroleum gas; Lpg; Propyl hydride; R 290; C3H8; UN 1075; UN 1978; A-108; Hydrocarbon propellant.
MSDS #	:	001045
Date of Prep/ Revision	:	8/19/2013.
In Case of Emergency	:	1-800-720-1563

SECTION 02

Hazards Identification

Physical State	:	Gas. [COLORLESS LIQUEFIED COMPRESSED GAS; ODORLESS BUT MAY HAVE SKUNK ODOR ADDED.]
Emergency Overview	:	**GAS:** OXIDIZER. CONTENTS UNDER PRESURE. MAY CAUSE TARGET ORGAN DAMAGE, BASED ON ANIMAL DATA. CONTACT WITH COMBUSTIBLE MATERIAL MAY CAUSE FIRE. Keep away from heat, sparks and flame. Do not puncture or incinerate container. May cause target organ damage, based on animal data. Use only with adequate ventilation. Keep container closed.

SECTION 02

Hazards Identification (Cont.)

Target Organs	:	May cause damage to the following organs: the nervous system, heart, central nervous system (CNS).
Routes of Entry	:	Inhalation

Potential Acute Health Effects

Eyes	:	Contact with rapidly expanding gas may cause burns or frostbite.
Skin	:	Contact with rapidly expanding gas may cause burns or frostbite.
Inhalation	:	Acts as a simple asphyxiant.
Ingestion	:	Ingestion is not a normal route of exposure for gases.

Potential chronic health effects

Chronic Effects	:	May cause target organ damage, based on animal data.
Target Organs	:	May cause damage to the following organs: the nervous system, heart, central nervous system (CNS).
Medical Conditions Aggravated by Overexposure	:	Pre-existing disorders involving any target organs mentioned in this MSDS as being at risk may be aggravated by over-exposure to this product.

See toxicological information (Section 11)

SECTION 03

Composition, Information on Ingredients

Name	:	Propane
CAS Number	:	74-98-6
% Volume	:	100
Exposure Limits	:	ACGIH TLV (United States, 3/2012). TWA: 1000 ppm 8 hour(s). NIOSH REL (United States, 1/2013). TWA: 1800 mg/m^3 10 hour(s).TWA: 1000 ppm 10 hour(s). OSHA PEL (United States, 6/2010). TWA: 1800 mg/m^3 8 hour(s). TWA: 1000 ppm 8 hour(s). OSHA PEL 1989 (United States, 3/1989). TWA: 1800 mg/m^3 8 hour(s). TWA: 1000 ppm 8 hour(s).

SECTION 04

First Aid Measures

No action shall be taken involving any personal risk or without suitable training.If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus.It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.

Eye Contact : Check for and remove any contact lenses. Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical attention immediately.

Skin Contact : In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse. Clean shoes thoroughly before reuse. Get medical attention immediately.

Frostbite : Try to warm up the frozen tissues and seek medical attention.

Inhalation : Move exposed person to fresh air. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention immediately.

Ingestion : As this product is a gas, refer to the inhalation section.

SECTION 05

Fire-Fighting Measures

Flammability of the Product : Flammable.

Auto-ignition Temperature : 450°C (842°F).

Flash Point : Closed cup: -104°C (-155.2°F). Open cup: -104°C (-155.2°F).

Flammable limits : Lower: 2.1% Upper: 9.5%

Products of Combustion : Decomposition products may include the following materials: carbon dioxide and carbon monoxide

Fire Hazards in the Presence of Various Substances : Extremely flammable in the presence of the following materials or conditions: open flames, sparks and static discharge and oxidizing materials.

Fire-fighting Media and Instructions : In case of fire, use water spray (fog), foam or dry chemical. In case of fire, allow gas to burn if flow cannot be shut off immediately. Apply water from a safe distance to cool container and protect surrounding area. If involved in fire, shut off flow immediately if it can be done without risk. Contains gas under pressure. 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.

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.

Personal Precautions : Immediately contact emergency personnel. Keep unnecessary personnel away. Use suitable protective equipment (section 8). Shut off gas supply if this can be done safely. Isolate area until gas has dispersed.

Environmental Precautions : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Methods for Cleaning Up : 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 07

Handling and Storage

Handling : High pressure gas. 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. Never allow any unprotected part of the body to touch uninsulated pipes or vessels that contain cryogenic liquids. Prevent entrapment of liquid in closed systems or piping without pressure relief devices. Some materials may become brittle at low temperatures and will easily fracture.

Storage : Keep container tightly closed. Keep container in a cool, well-ventilated area. Separate from acids, alkalies, reducing agents and combustibles. 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). For additional information concerning storage and handling refer to Compressed Gas Association pamphlets P-1 Safe Handling of Compressed Gases in Containers and P12 Safe Handling of Cryogenic Liquids available from the Compressed Gas Association, Inc.

SECTION 08

Exposure Controls / Personal Protection

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.

Personal Protection

Eyes : 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 or dusts.

Skin : 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.

Respiratory : 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.

The applicable standards are (US) 29 CFR 1910.134 and (Canada) Z94.4-93

SECTION 08

Exposure Controls / Personal Protection (Cont.)

Hands : 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.

Insulated gloves suitable for low temperatures.

Personal Protection in case of a Large Spill : Self-contained breathing apparatus (SCBA) should be used to avoid inhalation of the product.

Product Name : Propane
ACGIH TLV (United States, 3/2012).
TWA: 1000 ppm 8 hour(s).

NIOSH REL (United States, 1/2013).
TWA: 1800 mg/m^3 10 hour(s).
TWA: 1000 ppm 10 hour(s).

OSHA PEL (United States, 6/2010).
TWA: 1800 mg/m^3 8 hour(s).
TWA: 1000 ppm 8 hour(s).

OSHA PEL 1989 (United States, 3/1989).
TWA: 1800 mg/m^3 8 hour(s).

SECTION 09

Physical and Chemical Properties

Molecular Weight	:	44.11 g/mole
Molecular Formula	:	C3-H8
Boiling/condensation point	:	-42°C (-43.6°F)
Melting/Freezing Point	:	-189.7°C (-309.5°F)
Critical Temperature	:	96.6°C (205.9°F)
Vapor Pressure	:	109 (psig)
Vapor Density	:	1.6 (Air = 1)
Specific Volume (ft^3 /lb)	:	8.6206
Gas Density (lb/ft^3)	:	: 0.116

SECTION 10

Stability and Reactivity

Stability and Reactivity : The product is stable.

Incompatibility with Various Substances : Extremely reactive or incompatible with the following materials: oxidizing materials, reducing materials and combustible materials.

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

Toxicity Data

Product/Ingredient Name : Propane

Results, Species, Dose, Esposure : LC50 Inhalation Gas, Rat, >800000 ppm, 15-minutes

IDLH : 2100 ppm

Chronic Effects on Humans : May cause damage to the following organs: the nervous system, heart, central nervous system (CNS).

Other toxic effects on humans : No specific information is available in our database regarding the other toxic effects of this material to humans.

Specific Effects

Carcinogenic Effects : No known significant effects or critical hazards.

Mutagenic Effects : No known significant effects or critical hazards.

Reproduction Toxicity : No known significant effects or critical hazards.

SECTION 12

Ecological Information

Aquatic Ecotoxicity	:	Not Available
Products of Degradation	:	Products of degradation: carbon oxides (CO, CO2) and water.
Environmental Fate	:	Not Available
Environmental Hazards	:	This product shows a low bioaccumulation potential.
Toxicity to the Environment	:	Not Available

SECTION 13

Disposal Considerations

Product removed from the cylinder must be disposed of in accordance with appropriate Federal, State, local regulation.Return cylinders with residual product to Airgas, Inc.Do not dispose of locally.

SECTION 14

Transport Information

Regulatory Info	UN #	Proper Shipping Name	Class	Packing Group	Label	Additional Info
DOT Classification	UN1978	PROPANE	2.1	Not applicable (gas).		Limited quantity: Yes. Packaging instruction Passenger aircraft Quantity limitation: 75 kg Cargo aircraft Quantity limitation: 150 kg Special provisions 19, T50
TDG Classification	UN1978	PROPANE	2.1	Not applicable (gas).		Explosive Limit and Limited Quantity Index: 0.125 ERAP Index: 3000 Passenger Carrying Ship Index: 65 Passenger Carrying Road or Rail Index: Forbidden Special provision 29, 42
Mexico Classification	UN1978	PROPANE	2.1	Not applicable (gas).		-

"REFER TO CFR 49 (OR AUTHORITY HAVING JURISDICTION) TO DETERMINE THE INFORMATION REQUIRED FOR SHIPMENT OF THE PRODUCT."

SECTION 15

Regulatory Fnformation

United States

U.S. Federal Regulations :

TSCA 8(a) IUR: This material is listed or exempted.
United States inventory (TSCA 8b): This material is listed or exempted.
SARA 302/304/311/312 extremely hazardous substances: No products were found.
SARA 302/304 emergency planning and notification: No products were found.
SARA 302/304/311/312 hazardous chemicals: Propane
SARA 311/312 MSDS distribution - chemical inventory - hazard identification: Propane: Fire hazard, Sudden release of pressure, Delayed (chronic) health hazard.
Clean Air Act (CAA) 112 accidental release prevention - Flammable Substances: Propane
Clean Air Act (CAA) 112 regulated flammable substances: Propane

State Regulations :

Connecticut Carcinogen Reporting: This material is not listed.
Connecticut Hazardous Material Survey: This material is not listed.
Florida substances: This material is not listed.
Illinois Chemical Safety Act: This material is not listed.
Illinois Toxic Substances Disclosure to Employee Act: This material is not listed.
Louisiana Reporting: This material is not listed.
Louisiana Spill: This material is not listed.
Massachusetts Spill: This material is not listed.
Massachusetts Substances: This material is not listed.
Michigan Critical Material: This material is not listed.
Minnesota Hazardous Substances: This material is not listed.
New Jersey Hazardous Substances: This material is not listed.
New Jersey Spill: This material is not listed.
New Jersey Toxic Catastrophe Prevention Act: This material is not listed.
New York Acutely Hazardous Substances: This material is not listed.
New York Toxic Chemical Release Reporting: This material is not listed.
Pennsylvania RTK Hazardous Substances: This material is not listed.
Rhode Island Hazardous Substances: This material is not listed.
California Prop 65: WARNING: This product contains a chemical known to the State of California to cause birth defects or other reproductive harm.

SECTION 15

Regulatory Fnformation (Cont.)

Canada

WHMIS (Canada) : Class A: Compressed gas.
Class B-1: Flammable gas.
CEPA Toxic substances: This material is not listed.
Canadian ARET: This material is not listed.
Canadian NPRI: This material is not listed.
Alberta Designated Substances: This material is not listed.
Ontario Designated Substances: This material is not listed.
Quebec Designated Substances: This material is not listed.

SECTION 16

Other Information

United States
Label Requirements : FLAMMABLE GAS.
MAY CAUSE FLASH FIRE.
MAY CAUSE TARGET ORGAN DAMAGE, BASED ON ANIMAL DATA
CONTENTS UNDER PRESSURE.

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

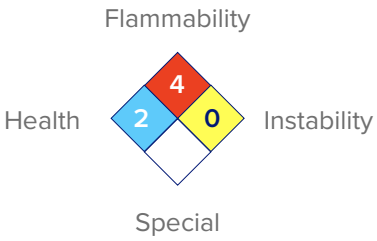
SECTION 16

Other Information (Cont.)

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

Health *	1
Fammability	4
Physical Hazards	2

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



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.