

# SAFETY DATA SHEET (SDS)

GHS and OSHA 29 CFR §1910.1200 (eCFR) compliant

UN1978



Revision: 1  
ISSUE DATE: May 17, 2015

## PROPANE C3H8

Dimethylmethane, Liquefied Petroleum Gas (LPG), Bottled Gas, refrigerant gas R1270

**STOODY INDUSTRIAL AND WELDING SUPPLY, INC.**  
3316 National Ave., San Diego, Ca. 92113  
Phone: 619-234-6750

[WWW.STOODYIND.COM](http://WWW.STOODYIND.COM)

### PHONE NUMBERS

Product Information: 619-234-6750

**24-hour Emergency Response**  
**Professional Emergency Resource Services**  
**800-633-8253**

**MILITARY EMERGENCY RESPONSE**  
**800-851-8061**

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6830-00-261-7445

6830-00-229-8946

6830-00-782-6491

6830-00-985-7278

6830-00-895-7279

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### SUPPLIER INFORMATION:

Safety and handling equipment, gas cylinders and refills, personal protection equipment, fire extinguishers, cylinder services, respirators, etc. are available at Stody Industrial and Welding Supply, Inc. Our main location is at 3316 National Avenue, (near the 32<sup>nd</sup> Street Naval Base) in San Diego California 92113. Call 1-619-234-6750 or visit our web site, [stodyind.com](http://stodyind.com) for more information.

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## PROPANE

### 1 IDENTIFICATION

- 1(a) **Product identifier used on label:** Propane
- 1(b) **Other means of identification:** Dimethylmethane, Liquefied Petroleum Gas (LPG), Bottled Gas, refrigerant gas R1270, UN1978, C3H8
- 1(c) **Recommended use of the chemical and restrictions on use:**  
Recommended use; Engine Fuel, Weld/Brazing & Cutting, Soldering, Heating and Cooking  
Restriction on use; NONE
- 1(d) **Name, address, and telephone number of the chemical manufacturer, importer, or other responsible party**  
Chemical Manufacturer: STOODY INDUSTRIAL AND WELDING SUPPLY, INC  
3316 National Avenue  
San Diego, CA 92113  
619-234-6750
- 1(e) **Emergency phone number**  
Professional Emergency Resource Services: 800-633-8253  
Military Emergency Resource: 800-851-8061

### 2 HAZARD(S) IDENTIFICATION

- 2(a) **Classification of chemical in accordance with paragraph (d) of §1910.1200**  
Flammable
- 2(b) **Signal word, hazard statement(s), symbol(s) and precautionary statement(s) in accordance with paragraph (f) of §1910.1200**

Signal Word	Hazard Statement(s)	Symbol(s)	Precautionary Statements
<b>Danger</b>	(H280) Contains Gases under Pressure; may explode if heated. (H220) Extremely flammable gas.	 Liquefied Gas	(General P210) <b>Keep away from heat/sparks/open flames/hot surfaces. - No smoking.</b> (Reaction P377 + P381) <b>Leaking gas fire: Do not extinguish, unless leak can be stopped safely. Eliminate all ignition sources if safe to do so.</b> (P403) <b>Store in a well ventilated place.</b>

- 2(c) **Describe any hazard not otherwise classified that have been identified during the classification process**  
Propane gas can pool in low areas and travel along the ground where an ignition source may be present..  
Large amount of potential energy resulting from compression of the gas makes the cylinder a potential rocket or fragmentation bomb.
- 2(d) **Where an ingredient with unknown acute toxicity is used in a mixture at a concentration = 1% and the mixture is not classified based on testing of the mixture as a whole, a statement that X% of the mixture consist of ingredient(s) of unknown acute toxicity is required.**  
Propane, CAS No. 74-98-6, consists of 0% of unknown acute toxicity.

### 3 COMPOSITION / INFORMATION ON INGREDIENTS

- 3(a) **Chemical name;** C3H6
- 3(b) **Common name;** Propane
- 3(c) **CAS number and other unique identifiers;**  
CAS Number      Other unique identifiers  
74-98-6              UN1978
- 3(d) **Impurities and stabilizing additives which are themselves classified and which contribute to the classification of the substance.**  
CAS number 74-98-6, Propane contains no other classification influencing impurities or stabilizing additives.

### 4 FIRST-AID MEASURES

- 4(a) **Description of necessary measures, subdivided according to the different routes of exposure, i.e., inhalation, skin and eye contact, and ingestion:**

#### ROUTES OF EXPOSURE (UNDER NORMAL CONDITIONS) (yes or no)

INHALATION: Yes	SKIN: Yes	EYE CONTACT: Yes	INGESTION: No
Effects: asphyxiation	Effects: None known	Effects: None known	Effects: None known

#### LIQUID STATE ROUTES OF EXPOSURE (yes or no)

INHALATION: No	SKIN: Yes	EYE CONTACT: Yes	INGESTION: No
Effects: None expected	Effects: severe frostbite	Effects: severe frostbite	Effects: None expected

Continued on next page

**4 FIRST-AID MEASURES** (continued from page 1)

**FIRST-AID:** (No action shall be taken involving any personal risk or without suitable training.)

**Inhalation** (asphyxiation); persons suffering from lack of oxygen should be removed to fresh air. If victim is not breathing, administer artificial respiration. Obtain prompt medical attention.

**Skin frostbite;** flush with lukewarm water, and obtain immediate medical attention. **DO NOT RUB EFFECTED AREA.**

**Eye frostbite;** flush eyes with cool water for 15 minutes and obtain immediate medical attention.

**Ingestion;** unlikely route of exposure, at normal atmospheric pressure liquid propane will flash to vapor.

**Note to physician:** Propane may be a heart sensitizer; avoid the use of epinephrine. There is no antidote. See 11(c)

**5 FIRE-FIGHTING MEASURES**

**5(a) Suitable (and unsuitable) extinguishing media**

Propane burns with a visible flame.

Combat fire from sheltered position.

Do not extinguish gas flame unless leak can be stopped safely, then only if absolutely necessary.

Suitable Extinguishing Media: Dry chemical or high expansion foam as recommended by foam manufacturers.

Unsuitable Extinguishing Media: DO NOT use carbon dioxide (CO<sub>2</sub>), low expansion foams, direct use of water on liquefied gas.

Flood cylinders with water from a maximum distance to keep them cool until they can be moved from fire area, if you can do it without risk.

**5(b) Specific hazards arising from the chemical (e.g., nature of any hazardous combustion products).**

If flames are coming from the cylinder valve allow them to burn out. Accidentally extinguished flames can explosively re-ignite.

Pressure in a cylinder can build due to nearby fire heat and may rupture if pressure relief devices should fail to function.

Self-contained breathing apparatus (SCBA) may be required for rescue workers.

Damaged cylinders should be handled only specialists.

**6 ACCIDENTAL RELEASE MEASURES**

**6(a) Personal precautions, protective equipment, emergency procedures.**

Never enter a confined space or other area where the concentration is greater than (0.022%) 10% of Lower Explosion level (LEL).

**Escaping Propane gas vapor mixed with air is explosive.** See 10(d)

Reduce gas vapor with fog or fine water spray. Remove all sources of ignition and evacuate all personnel from the affected area. Shut off leak source only when it can be done safely.

**6(b) Method and materials for containment and cleaning up.**

Use water spray to reduce or divert vapor cloud drift. Isolate area until gas has dissipated and been determined safe. Before entering area you must check for flammable or oxygen-deficient atmospheres (a normal flammable gas detector is not suited for the purpose). Flammable limits in air by volume: Lower Explosion level (LEL) = 2.2%; Upper Explosion Level (UEL) = 9.5%.

**7 HANDLING AND STORAGE**

• Keep out of reach of children. • Gas/air mixtures are explosive; there may or may not be an odor warning. • Keep away from heat, sparks and open flame. • Use only spark-proof tools and explosion-proof equipment. • All piped Propane systems and associated electrical equipment must be grounded. • Do not crack or open cylinder valves unless it is connected for use.

For "Additional Precautions in Using Propane" see Section 16 - Other Information.

**7(b) Conditions for safe storage, including any incompatibilities.**

Conditions for safe storage	Incompatibilities
<ol style="list-style-type: none"> <li>1. Store and use with adequate ventilation.</li> <li>2. Cylinders should be stored upright with valve protection cap in place and firmly secured to prevent falling or being knocked over.</li> <li>3. Protect cylinders from physical damage; do not drag, roll, slide or drop.</li> <li>4. Full cylinders should be segregated from empty cylinders.</li> <li>5. Do not allow storage area temperature to exceed 125°F (52°C).</li> <li>6. Use a first-in, first-out inventory system to prevent full containers from being stored for long periods of time.</li> <li>7. Use a suitable hand truck for cylinder movement.</li> <li>8. Never attempt to lift a cylinder by its valve protection cap.</li> <li>9. Keep cylinders and their valves free from oil and grease.</li> <li>10. 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.</li> </ol>	<p><b>Oxidizing Agents, Chlorine Dioxide</b></p> <p>Cylinders of Propane 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 ½ hour.</p>

Specific requirements are listed in NFPA 50A. Cylinder storage locations should be well-protected, well-ventilated, dry, and separated from combustible materials. Cylinders should never knowingly be allowed to reach a temperature exceeding 125°F (52°C).

**8 EXPOSURE CONTROLS / PERSONAL PROTECTION**

**8(a) OSHA permissible exposure limit (PEL), American Conference of Governments Industrial Hygienists (ACGIH) Threshold Limits Value (TLV), and any other exposure limit used or recommended by the chemical manufacturer, importer, or employer preparing the safety data sheet, where available.**

OSHA PEL; TWA 1000 ppm (1800 mg/m<sup>3</sup>). Measuring method: OSHA PV2077.

NIOSH REL: TWA 1000 ppm (1800 mg/m<sup>3</sup>). Measuring method; NIOSH S87 (II-2).

**Maritime: 29 CFR 1915.1000 Table Z-Shipyards** -- Simple asphyxiants. The limiting factor is the available oxygen which shall be at least 18 percent and be within the requirements addressing explosion in subpart B of part 1915.

**American Conference of Governmental Industrial Hygienists (ACGIH) Threshold Limit Value (TLV):** TWA (2009): 500ppm, 8 hr. (Provided as health guidance information, does not establish safe vs dangerous concentrations).

**Immediate Danger to Life or Health (IDLH):** 2,100 ppm [LEL]; based strictly on safety considerations (i.e., being 10% of the lower explosive limit of 2.1%).

**8(b) Appropriate engineering controls.**

Use non-sparking ventilation systems, approved explosion-proof equipment and intrinsically safe electrical systems in areas where this product is used and stored. Use leak and fire detection equipment and an automatic fire suppression system. Provide safety shower in work area, if contact or splash hazard exists.

**8(c) Individual protection measures, such as personal protective equipment.**

- Wear long sleeves, protective apron and trousers worn outside of boots. work gloves (gloves must be clean and free of oil or grease).
- Safety shoes are recommended when handling cylinders.
- When possible wear cotton clothing to prevent possible electro-static discharge.
- A NIOSH approved self-contained breathing apparatus (SCBA), or supplied air respirator if oxygen is below acceptable limits.

**9 PHYSICAL and CHEMICAL PROPERTIES**

<b>a) Appearance (physical state, color, etc.)</b>	Colorless Gas, Gas at normal temperature and pressure
<b>b) Odor</b>	Odorless, (A foul-smelling odorant is often added when used for fuel purposes)
<b>c) Odor threshold</b>	Not applicable
<b>d) pH</b>	Not applicable
<b>e) Melting point/freezing point</b>	-305.84°F (-187.69° C) @1 atm
<b>f) Initial boiling point</b>	-44.05 °F (-42.25 °C) @1 atm
<b>g) Flash point</b>	-156 °F (-105 °C)
<b>h) Evaporation rate</b>	High
<b>i) Flammability (solid, gas)</b>	Flammable (gas)
<b>j) Upper/lower flammability or explosive limits</b>	LEL = 2.1%; UEL = 9.5%
<b>k) Vapor pressure</b>	109.73 psig (756.56 kPa) @ 70°F (21.2° C)
<b>l) Vapor density</b>	0.2612 lb/ft <sup>3</sup> (4.183 kg/m <sup>3</sup> ) @ 70° F (21.1° C), 1 atm
<b>m) Relative density</b>	1.55 (air = 1)
<b>n) Solubility(ies)</b>	0.065 Vol./Vol. @ 100°F (37.8°C), in water
<b>o) Partition coefficient: n-octanol/water</b>	Not available
<b>p) Auto-ignition temperature</b>	842° F, (467° C)
<b>q) Decomposition temperature</b>	Not available
<b>r) Viscosity</b>	Not available

**10 STABILITY and REACTIVITY**

**10(a) Reactivity**

May explode in the presence of oxidizers. See 7(b)

**10(b) Chemical stability**

Normally Stable

**10(c) Possibility of hazardous reactions**

See 10(a)

**10(d) Conditions to avoid (e.g., static discharge, shock, or vibration)**

Pilot light flame, an electrical heater, an electrical switch spark, static discharge, tool strike spark, and ignition sources at distances away from the release point can cause combustion.

**10(f) Incompatible materials**

See 10(a).

**10(g) Hazardous decomposition products**

Burning/welding/cutting may produce carbon monoxide/carbon dioxide

**11 TOXICOLOGICAL INFORMATION**

*Description of the various toxicological (health) effects and available data used to identify those effects, including:*

- 11(a) Information on likely routes of exposure (inhalation, ingestion, skin and eye contact);**  
Propane can be absorbed into the body by Inhalation. Target organ: Central Nervous System.
- 11(b) Symptoms related to the physical, chemical and toxicological characteristics;**  
Dizziness, unconsciousness, asphyxia; skin severe frostbite/burns, eye frostbite (on contact with liquid).
- 11(c) Delayed and immediate effects and also chronic effects from short- and long-term exposure;**  
Short-term effects: Suffocation. At very high concentrations, propane may be a cardiac sensitizer, causing cardiac arrhythmias or arrest due to sensitization of the heart to adrenaline and noradrenalin (the bodies fight or flight reaction).
- 11(d) Numerical measures of toxicity (such as acute toxicity estimates)**  
No identifiable acute toxicity.
- 11(e) Whether the hazardous chemical is listed in the International Toxicology Program (NTP) Report on Carcinogenic (latest edition) or has been found to be a potential carcinogenic in the International Agency for Research on Cancer (IARC) Monographs (latest edition), or by OSHA.**  
Propane is not listed as a carcinogenic or potential carcinogenic by NTP, OSHA or IARC.

**12 ECOLOGICAL INFORMATION**

- 12(a) Ecotoxicity (aquatic and terrestrial, where available)**  
This product does not contain ecotoxicological properties, aquatic or terrestrial
- 12(b) Persistence and degradability**  
No adverse information found
- 12(c) Bioaccumulative potential**  
This product does not have a bioaccumulative potential
- 12(d) Mobility in soil**  
No adverse information found
- 12(e) Other adverse effects (such as hazardous to the ozone layer)**  
No adverse ecological effects are expected. Propane does not contain any Class I or Class II ozone depleting chemicals (40 CFR Part 82). Propane is not listed as a marine pollutant by DOT (49 CFR Part 171).

**13 DISPOSAL CONSIDERATIONS**

- 13(a) Description of waste residue and information on their safe handling and method of disposal, including the disposal of any contaminated packaging.**  
Do not attempt to dispose of cylinder or its contents. Cylinder(s) and unused contents should be returned to supplier for disposal in accordance with appropriate Federal, State, local regulation.  
**Related Information** (European Waste Code, EWC 16 05 04): Do not discharge into areas where there is a risk of forming an explosive mixture with air. Waste gas should be flared through a suitable burner with a flash back arrestor. Do not discharge into any place where accumulation could be dangerous.  
Residual product within process system may be vented at a controlled rate, to the atmosphere through a vent stack that discharges to an elevated point. This vent stack should be in an isolated area away from ignition sources.

**14 TRANSPORTATION INFORMATION**

- 14(a) UN number:** UN 1978
- 14(b) UN proper shipping name:** Propane
- 14(c) Transportation hazard class(es):** 2.1
- 14(d) Packing group, if applicable:** Product is not listed
- 14(e) Environmental hazards (e.g.,) Marine pollutant (yes/No):** No
- 14(f) Transport in bulk (according to Annex II of MARPOL 73/78 and IBC Code):**  
Product does not fall under purview of cited regulations.
- 14(g) Special precautions which a user needs to be aware of, or needs to comply with, in connection with transport or conveyance either within or outside of their premises:**  
Cylinders should be properly separated from non-compatible gas cylinders and transported in a upright, secure position, in a well ventilated vehicle. The transportation of compressed gas cylinders in automobiles or in closed-body vehicles can present serious safety hazards and should be discouraged.

**15 REGULATORY INFORMATION**

**15(a) Safety, health and environmental regulations specific for the product in question.**

User(s) of this product are solely responsible for regulatory compliance on a federal, state, and local level.

U.S. FEDERAL REGULATIONS:

EPA - ENVIRONMENTAL PROTECTION AGENCY

40 CFR PART 68, Risk Management for Chemical Accidental Release, does not list Propane as a regulated substance in quantities less than 10,000 lb (4536 kg). Facilities that manufacture, use, store or otherwise handle quantities 10,000 lbs or greater that are required to develop and implement risk management programs.

CERCLA: Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (40 CFR Parts 117 and 302):  
Reportable Quantity (RQ): None

SARA: Superfund Amendment and Reauthorization Act

SECTION 302/304: Requires emergency planning on threshold planning quantities (TPQ) and release reporting based on reportable quantities (RQ) of EPA's extremely hazardous substances (40 CFR Part 355).

Extremely Hazardous Substances: None  
Threshold Planning Quantity (TPQ): None

SECTIONS 311/312: Require submission of material safety data sheets (MSDSs) and chemical inventory reporting with identification of EPA defined hazard classes (40 CFR Part 370). The hazard classes for this product are:

ACUTE HEALTH (Immediate): Yes	CHRONIC HEALTH (Delayed): No
PRESSURE: Yes	REACTIVITY: No
FIRE: Yes	

TSCA: Toxic Substance Control Act: Propane is listed on the TSCA inventory.

OSHA - OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION:

29 CFR 1910.119, Appendix A, does not list Propane as a highly hazardous chemical.

No adverse ecological effects are expected. Propane does not contain any Class I or Class II ozone depleting chemicals (40 CFR Part 82). Propane is not listed as a marine pollutant by DOT (49 CFR Part 171).

Shipment of compressed gas cylinders which have not been filled with the owner's consent is a violation of Federal law (49 CFR Part 173.301 (b)).

CALIFORNIA PROPOSITION 65 (Safe Drinking Water and Toxic Enforcement Act of 1986): Propane is not listed.

WARNING: Combustion of this Propane produces carbon monoxide, a chemical known to the State of California to cause birth defects or other reproductive harm. (California Health and Safety Code §25249.6)

CANADIAN REGULATIONS:

WHIMS Classification; A - Compressed gas, absolute pressure at 21.1°C = 1.043 kPa; B-1-Flammable Gas, LEL = 2.1%

Note: "The Canadian supplier / Canadian importer has the legal responsibility to assess their products against the criteria set out in the Controlled Products Regulations."

**16 OTHER INFORMATION, Including date of preparation or last revision**

**16(a) OTHER INFORMATION:**

**Never rely on the color of the cylinder for identification.** (Colors may vary with suppliers.)

**Additional Precautions in Using Propane:**

1. Post "No Smoking or Open Flames" signs in storage and use areas. (There must be no source of ignition.)
2. Use piping and equipment adequately designed to withstand pressures to be encountered.
3. Propane cylinder valve should only be opened enough to indicate pressure on the regulator gauge (not more than ¾ to 1 ½ turns) so that the valve can be closed quickly in emergency situations. Opening too little may provide insufficient pressure and lead to a Backflash.
4. Use piping and equipment adequately designed to withstand pressures to be encountered.
5. Use a check valve or other protective apparatus in any line or piping from the cylinder to prevent reverse flow.
6. Install valve protective cap firmly in place by hand when the cylinder is not in use.
7. A cylinder should never be emptied to a pressure lower than 172 kPa (25 psi/in2) (the residual contents may become contaminated if the valve is left open)
8. Close cylinder valve after each use even when empty.
9. Under no circumstances should any attempt be made to repair a cylinder or valve.
10. Check all connections with a soap solution for leaks, never check for leaks with using an open flame.

Continued on next page

**16 OTHER INFORMATION, Including date of preparation or last revision** (continued from page 5)

**NFPA RATINGS:**

**HEALTH-Blue: = 1    FLAMMABILITY-Red: = 4    INSTABILITY-Yellow: = 0    SPECIAL HAZARDS\*-White: =**

**LEGEND: 0-4 – 0-least hazardous; 4-most hazardous**

**\*OX (Oxidizers), W (Water reactives), SA (Simple Asphyxiants), (blank if no special hazard)**

**STANDARD VALVE CONNECTIONS FOR U.S. AND CANADA:**

**THREADED:** CGA 510

CGA-790 (gas grills)

CGA -555 (liquid withdrawal)

Quick-Connect ACME & 1/4 F. NPT, OPD

**PIN-INDEXED YOKE:** None

**ULTRA HIGH INTEGRITY:** None

Use the proper CGA connections, DO NOT USE ADAPTERS

Further information pertaining to Propane and its uses can be found in pamphlets published by: Compressed Gas Association Inc. (CGA), 1725 Jefferson Davis Highway, Suite 1004, Arlington, VA 22202-4102. Telephone: (703)412-0900.

**SUPPLIER INFORMATION:**

Safety and handling equipment, gas cylinders and refills, personal protection equipment, fire extinguishers, cylinder services, respirators, etc. are available at Stody Industrial and Welding Supply, Inc. Our main location is at 3316 National Avenue . (near the 32<sup>nd</sup> Street Naval Base) in San Diego California 92113. Call 1-619-234-6750 or visit our web site, [stodyind.com](http://stodyind.com) [stodyind.com](http://stodyind.com) for more information.

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