# SAFETY DATA SHEET

## 1. Identification

**Product identifier** **Propane**

**Other means of identification**

**SDS number** WC002

**Product code** UN1075

**Recommended use** Portable fuel.

**Recommended restrictions** None known.

**Manufacturer/Importer/Supplier/Distributor information**

**Manufacturer/Supplier** Worthington Cylinder Corporation

**Address** 300 E. Breed St., Chilton, WI 5301
United States

**Contact person** Ann Stiefvater

**E-mail address** Ann.Stiefvater@worthingtonindustries.com

**Telephone number** 1-920-849-1740

**Emergency telephone number** 1-703-527-3887 International / CHEMTREC 1-800-424-9300 Domestic

## 2. Hazard(s) identification

| | | |
|---|---|---|
| **Physical hazards** | Flammable gases | Category 1 |
| | Gases under pressure | Liquefied gas |

**Health hazards** Not classified.

**OSHA defined hazards** Not classified.

**Label elements**

**Signal word** Danger

**Hazard statement** Extremely flammable gas. Contains gas under pressure; may explode if heated.

**Precautionary statement**

**Prevention** Keep away from heat/sparks/open flames/hot surfaces. - 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. Store in a well-ventilated place.

**Disposal** Dispose of waste and residues in accordance with local authority requirements.

**Hazard(s) not otherwise classified (HNOC)** May displace oxygen and cause rapid suffocation.

## 3. Composition/information on ingredients

**Mixtures**

| Chemical name | CAS number | % |
|---|---|---|
| Propane | 74-98-6 | 87.5-100 |
| Ethane | 74-84-0 | 0-7 |
| Propylene | 115-07-1 | 0-5 |
| Butane | 106-97-8 | 0-2.5 |

**Additives**

| Chemical name | CAS number | % |
|---|---|---|
| Ethyl Mercaptan | 75-08-1 | <0.005 |

**Composition comments** All concentrations are in percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

## 4. First-aid measures

**Inhalation** Move to fresh air. If breathing is difficult, give oxygen. If not breathing, give artificial respiration. Call a physician or poison control center immediately.

**Skin contact** Remove contaminated clothing immediately and wash skin with soap and water. Get medical attention if irritation develops and persists. If frostbite occurs, immerse involved area in warm water (between 100 F/38 C and 110 F/43 C, not exceeding 112 F/44 C). Keep immersed for 20 to 40 minutes. Seek medical assistance.

**Eye contact** Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention immediately.

**Ingestion** Ingestion is not a typical route of exposure for gases or liquefied gases.

**Most important symptoms/effects, acute and delayed** Exposure to rapidly expanding gas or vaporizing liquid may cause frostbite ("cold burn"). Very high exposure can cause suffocation from lack of oxygen. May cause drowsiness or dizziness.

**Indication of immediate medical attention and special treatment needed** Exposure may aggravate pre-existing respiratory disorders. Treat symptomatically.

**General information** Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

## 5. Fire-fighting measures

**Suitable extinguishing media** Dry chemical, CO2, water spray, fog, or foam.

**Unsuitable extinguishing media** None known.

**Specific hazards arising from the chemical** Selection of respiratory protection for firefighting: follow the general fire precautions indicated in the workplace.

**Special protective equipment and precautions for firefighters** Self-contained breathing apparatus and full protective clothing must be worn in case of fire.

**Fire-fighting equipment/instructions** Move container from fire area if it can be done without risk.

Do not extinguish fires unless gas flow can be stopped safely; explosive re-ignition may occur. Promptly isolate the scene by removing all persons from the vicinity of the incident. No action shall be taken involving any personal risk or without suitable training. For fires involving this material, do not enter any enclosed or confined fire space without proper protective equipment, including self-contained breathing apparatus. Stop flow of material. Use water to keep fire exposed containers cool and to protect personnel effecting shutoff. If a leak or spill has not ignited, use water spray to disperse the vapors and to protect personnel attempting to stop leak. Prevent runoff from fire control or dilution from entering streams, sewers or drinking water supply.

**General fire hazards** Extremely flammable gas.

## 6. Accidental release measures

**Personal precautions, protective equipment and emergency procedures** Evacuate the area promptly. No action shall be taken involving any personal risk or without suitable training. Keep unnecessary personnel away.

Ensure adequate ventilation. In case of inadequate ventilation, use respiratory protection. Wear appropriate personal protective equipment (See Section 8).

**Methods and materials for containment and cleaning up** Ventilate well, stop flow of gas or liquid if possible. Immediately contact emergency personnel.

**Environmental precautions** Should not be released into the environment. Prevent further leakage or spillage if safe to do so. Prevent from entering into soil, ditches, sanitary sewers, waterways and/or groundwater.

## 7. Handling and storage

**Precautions for safe handling** Eliminate all sources of ignition. Wear appropriate personal protective equipment (See Section 8). Eating, drinking, and smoking should be prohibited in areas where this material is handled, stored, and processed. Do not breathe gas. Do not get in eyes, on skin, on clothing. Use only with adequate ventilation.

**Conditions for safe storage, including any incompatibilities** Store in accordance with local, regional, national, and international regulations. Secure cylinders in an upright position at all times, close all valves when not in use. Store in a cool, dry, well-ventilated place. Keep container tightly closed and sealed until ready for use. Protect cylinders from damage.

## 8. Exposure controls/personal protection

**Occupational exposure limits**

**US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)**

| Components | Type | Value |
|---|---|---|
| Propane (CAS 74-98-6) | PEL | 1800 mg/m3<br>1000 ppm |
| **Additives** | **Type** | **Value** |
| Ethyl Mercaptan (CAS 75-08-1) | Ceiling | 25 mg/m3<br>10 ppm |

**US. ACGIH Threshold Limit Values**

| Components | Type | Value |
|---|---|---|
| Butane (CAS 106-97-8) | STEL | 1000 ppm |
| Propylene (CAS 115-07-1) | TWA | 500 ppm |
| **Additives** | **Type** | **Value** |
| Ethyl Mercaptan (CAS 75-08-1) | TWA | 0.5 ppm |

**US. NIOSH: Pocket Guide to Chemical Hazards**

| Components | Type | Value |
|---|---|---|
| Butane (CAS 106-97-8) | TWA | 1900 mg/m3<br>800 ppm |
| Propane (CAS 74-98-6) | TWA | 1800 mg/m3<br>1000 ppm |
| **Additives** | **Type** | **Value** |
| Ethyl Mercaptan (CAS 75-08-1) | Ceiling | 1.3 mg/m3<br>0.5 ppm |

**Biological limit values** No biological exposure limits noted for the ingredient(s).

**Appropriate engineering controls** Provide adequate ventilation and minimize the risk of inhalation of gas. Use process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below recommended exposure limits.

**Individual protection measures, such as personal protective equipment**

**Eye/face protection** Wear approved safety glasses or goggles.

**Skin protection**

**Hand protection** Wear appropriate chemical resistant gloves.

**Other** Wear protective clothing appropriate for the risk of exposure.

**Respiratory protection** If engineering controls do not maintain airborne concentrations below recommended exposure limits (where applicable) or to an acceptable level (in countries where exposure limits have not been established), an approved respirator must be worn.

**Thermal hazards** Contact with liquefied gas might cause frostbites, in some cases with tissue damage. Wear appropriate thermal protective clothing, when necessary.

**General hygiene considerations** Do not eat, drink or smoke when using the product. Wash thoroughly after handling. Provide eyewash station and safety shower. Handle in accordance with good industrial hygiene and safety practices.

## 9. Physical and chemical properties

**Appearance** Colorless gas.

**Physical state** Gas.

**Form** Compressed liquefied gas.

**Color** Colorless.

**Odor** Rotten egg.

| | |
|---|---|
| **Odor threshold** | Not available. |
| **pH** | Not applicable. |
| **Melting point/freezing point** | -306.4 °F (-188 °C) |
| **Initial boiling point and boiling range** | -43.6 °F (-42 °C) 14.7 psia |
| **Flash point** | -155.2 °F (-104.0 °C) |
| **Evaporation rate** | Not applicable. |
| **Flammability (solid, gas)** | Extremely flammable gas. |
| **Upper/lower flammability or explosive limits** | |
| **Explosive limit - lower (%)** | 2.15 % |
| **Explosive limit - upper (%)** | 9.6 % |
| **Vapor pressure** | 127 psig (21°C / 70°F) |
| **Vapor density** | Not available. |
| **Relative density** | 0.504 (liquid)<br>1.5 (vapor) (air=1) @ 15°C / 60°F |
| **Solubility(ies)** | |
| **Solubility (water)** | Slightly soluble in water. |
| **Partition coefficient (n-octanol/water)** | 1.77 |
| **Auto-ignition temperature** | 809.6 °F (432 °C) |
| **Decomposition temperature** | Not available. |
| **Viscosity** | Not applicable. |
| **Other information** | |
| **Molecular weight** | 45 g/mol |
| **Percent volatile** | 100 % |

## 10. Stability and reactivity

| | |
|---|---|
| **Reactivity** | Reacts violently with strong oxidants, nitrites, inorganic chlorides, chlorites and perchlorates causing fire and explosion hazard. |
| **Chemical stability** | Stable under normal temperature conditions and recommended use. |
| **Possibility of hazardous reactions** | Polymerization will not occur. |
| **Conditions to avoid** | Heat, flames and sparks. |
| **Incompatible materials** | Strong oxidizing agents. Strong acids. Halogens. |
| **Hazardous decomposition products** | Carbon oxides. Hydrocarbons. |

## 11. Toxicological information

**Information on likely routes of exposure**

| | |
|---|---|
| **Ingestion** | Not likely, due to the form of the product. |
| **Inhalation** | High concentrations: Suffocation (asphyxiant) hazard - if allowed to accumulate to concentrations that reduce oxygen below safe breathing levels. Breathing of high concentrations may cause dizziness, light-headedness, headache, nausea and loss of coordination. Continued inhalation may result in unconsciousness. |
| **Skin contact** | Contact with liquefied gas may cause frostbite. |
| **Eye contact** | Contact with liquefied gas may cause frostbite. |
| **Symptoms related to the physical, chemical and toxicological characteristics** | Exposure to rapidly expanding gas or vaporizing liquid may cause frostbite ("cold burn"). Very high exposure can cause suffocation from lack of oxygen. May cause drowsiness or dizziness. |

**Information on toxicological effects**

| | |
|---|---|
| **Acute toxicity** | High concentration: Suffocation (asphyxiant) hazard - if allowed to accumulate to concentrations that reduce oxygen below safe breathing levels. |

| Components | Species | Test Results |
|---|---|---|
| Butane (CAS 106-97-8) | | |
| **Acute** | | |
| *Inhalation* | | |
| LC50 | Mouse | 680 mg/l, 2 Hours |
| | Rat | 658 mg/l, 4 Hours |
| Propane (CAS 74-98-6) | | |
| **Acute** | | |
| *Inhalation* | | |
| LC50 | Rat | > 1442 mg/l, 15 Minutes |
| Propylene (CAS 115-07-1) | | |
| **Acute** | | |
| *Inhalation* | | |
| LC50 | Mouse | 680 mg/l, 2 Hours |
| | Rat | 658 mg/l, 4 Hours |

| Additives | Species | Test Results |
|---|---|---|
| Ethyl Mercaptan (CAS 75-08-1) | | |
| **Acute** | | |
| *Dermal* | | |
| LD50 | Rat | > 2000 mg/kg |
| *Inhalation* | | |
| LC50 | Mouse | 4420 mg/l, 4 Hours |
| *Oral* | | |
| LD50 | Rat | 682 mg/kg |

**Skin corrosion/irritation** Contact with liquefied gas might cause frostbites, in some cases with tissue damage.

**Serious eye damage/eye irritation** Direct contact with liquefied gas may cause eye damage from frostbite.

**Respiratory or skin sensitization**

**Respiratory sensitization** Not classified.

**Skin sensitization** Not classified.

**Germ cell mutagenicity** Not classified.

**Carcinogenicity** Not classified.

**IARC Monographs. Overall Evaluation of Carcinogenicity**

Propylene (CAS 115-07-1) 3 Not classifiable as to carcinogenicity to humans.

**Reproductive toxicity** Not classified.

**Specific target organ toxicity - single exposure** Not classified.

**Specific target organ toxicity - repeated exposure** Not classified.

**Aspiration hazard** Not classified.

## 12. Ecological information

**Ecotoxicity** Not expected to be harmful to aquatic organisms.

**Persistence and degradability** The product is readily biodegradable.

**Bioaccumulative potential** The product is not expected to bioaccumulate.

**Partition coefficient n-octanol / water (log Kow)**

| | |
|---|---|
| Propane (CAS Mixture) | 1.77 |
| Butane (CAS 106-97-8) | 2.89 |
| Propane (CAS 74-98-6) | 2.36 |
| Propylene (CAS 115-07-1) | 1.77 |

**Mobility in soil** May evaporate quickly.

**Mobility in general** May evaporate quickly.

| | |
|---|---|
| **Other adverse effects** | None known. |

## 13. Disposal considerations

| | |
|---|---|
| **Disposal instructions** | Use the container until empty. Do not dispose of any non-empty container. Empty containers have residual vapor that is flammable and explosive. Cylinders should be emptied and returned to a hazardous waste collection point. Do not puncture or incinerate even when empty. Dispose in accordance with all applicable regulations. |
| **Hazardous waste code** | D001: Waste Flammable material with a flash point <140 °F |
| **Waste from residues / unused products** | Dispose in accordance with all applicable regulations. |
| **Contaminated packaging** | Since emptied containers may retain product residue, follow label warnings even after container is emptied. |

## 14. Transport information

**DOT**

| | |
|---|---|
| **UN number** | UN1075 |
| **UN proper shipping name** | Petroleum Gases, liquefied |
| **Transport hazard class(es)** | |
| **Class** | 2.1 |
| **Subsidiary risk** | - |
| **Packing group** | Not applicable. |
| **Environmental hazards** | |
| **Marine pollutant** | No |
| **Special precautions for user** | Read safety instructions, SDS and emergency procedures before handling. |
| **Special provisions** | 19, T50 |
| **Packaging exceptions** | 306 |
| **Packaging non bulk** | 304 |
| **Packaging bulk** | 314, 315 |

**IATA**

| | |
|---|---|
| **UN number** | UN1075 |
| **UN proper shipping name** | Petroleum Gases, liquefied |
| **Transport hazard class(es)** | |
| **Class** | 2.1 |
| **Subsidiary risk** | - |
| **Label(s)** | 2.1 |
| **Packing group** | Not applicable. |
| **Environmental hazards** | No |
| **ERG Code** | 10L |
| **Special precautions for user** | Read safety instructions, SDS and emergency procedures before handling. |

**IMDG**

| | |
|---|---|
| **UN number** | UN1075 |
| **UN proper shipping name** | Petroleum Gases, liquefied |
| **Transport hazard class(es)** | |
| **Class** | 2.1 |
| **Subsidiary risk** | - |
| **Label(s)** | 2.1 |
| **Packing group** | Not applicable. |
| **Environmental hazards** | |
| **Marine pollutant** | No |
| **EmS** | F-D, S-U |
| **Special precautions for user** | Read safety instructions, SDS and emergency procedures before handling. |

| | |
|---|---|
| **Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code** | This product is a compressed or liquefied gas and when transported in bulk is covered under IGC code. |

## 15. Regulatory information

| | |
|---|---|
| **US federal regulations** | This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.<br>All components are on the U.S. EPA TSCA Inventory List. |

**TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)**

Not regulated.

**US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)**

Not listed.

**CERCLA Hazardous Substance List (40 CFR 302.4)**

| | |
|---|---|
| Butane (CAS 106-97-8) | LISTED |
| Ethyl Mercaptan (CAS 75-08-1) | LISTED |
| Propane (CAS 74-98-6) | LISTED |
| Propylene (CAS 115-07-1) | LISTED |

**Superfund Amendments and Reauthorization Act of 1986 (SARA)**

**Hazard categories**

Immediate Hazard - No
Delayed Hazard - No
Fire Hazard - Yes
Pressure Hazard - Yes
Reactivity Hazard - No

**SARA 302 Extremely hazardous substance**

Not listed.

**SARA 311/312 Hazardous chemical** Yes

**SARA 313 (TRI reporting)**

| Chemical name | CAS number | % by wt. |
|---|---|---|
| Propylene | 115-07-1 | 0-5 |

**Other federal regulations**

**Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List**

Not regulated.

**Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)**

Butane (CAS 106-97-8)
Ethyl Mercaptan (CAS 75-08-1)
Propane (CAS 74-98-6)
Propylene (CAS 115-07-1)

**Clean Water Act (CWA) Section 112(r) (40 CFR 68.130)** Hazardous substance

**Safe Drinking Water Act (SDWA)** Not regulated.

**US state regulations**

**US. Massachusetts RTK - Substance List**

Butane (CAS 106-97-8)
Ethyl Mercaptan (CAS 75-08-1)
Propane (CAS 74-98-6)
Propylene (CAS 115-07-1)

**US. New Jersey Worker and Community Right-to-Know Act**

Butane (CAS 106-97-8)
Ethyl Mercaptan (CAS 75-08-1)
Propane (CAS 74-98-6)
Propylene (CAS 115-07-1)

**US. Pennsylvania Worker and Community Right-to-Know Law**

Butane (CAS 106-97-8)
Ethyl Mercaptan (CAS 75-08-1)
Propane (CAS 74-98-6)
Propylene (CAS 115-07-1)

**US. Rhode Island RTK**

Butane (CAS 106-97-8)
Ethyl Mercaptan (CAS 75-08-1)
Propane (CAS 74-98-6)
Propylene (CAS 115-07-1)

**US. California Proposition 65**

**US - California Proposition 65 - Carcinogens & Reproductive Toxicity (CRT): Listed substance**

Not listed.

**International Inventories**

| Country(s) or region | Inventory name | On inventory (yes/no)* |
|---|---|---|
| Australia | Australian Inventory of Chemical Substances (AICS) | Yes |
| Canada | Domestic Substances List (DSL) | Yes |
| Canada | Non-Domestic Substances List (NDSL) | No |
| China | Inventory of Existing Chemical Substances in China (IECSC) | Yes |
| Europe | European Inventory of Existing Commercial Chemical Substances (EINECS) | Yes |
| Europe | European List of Notified Chemical Substances (ELINCS) | No |
| Japan | Inventory of Existing and New Chemical Substances (ENCS) | Yes |
| Korea | Existing Chemicals List (ECL) | Yes |
| New Zealand | New Zealand Inventory | Yes |
| Philippines | Philippine Inventory of Chemicals and Chemical Substances (PICCS) | Yes |
| United States & Puerto Rico | Toxic Substances Control Act (TSCA) Inventory | Yes |

*A "Yes" indicates this product complies with the inventory requirements administered by the governing country(s).
A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

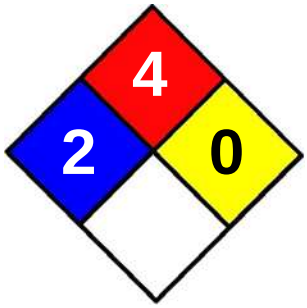
## 16. Other information, including date of preparation or last revision

**Issue date** 05-May-2014

**Revision date** 25-March-2015

**Version #** 03

**NFPA Ratings**

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