1. Identification

Product identifier: Propane

Other means of identification:
- SDS number: WC002
- Product code: UN 1075

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:
- Category 1: Flammable gases
- Gases under pressure: Liquefied gas

Health hazards: Not classified.

OSHA defined hazards: Simple asphyxiant

Label elements:

Signal word: Danger

Hazard statement: Extremely flammable gas. Contains gas under pressure; may explode if heated. May displace oxygen and cause rapid suffocation.

Precautionary statement:

Prevention: Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Keep container tightly closed. Use only outdoors or in a well-ventilated area. Wear respiratory protection.

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): None known.

Supplemental information: None.

3. Composition/information on ingredients

Mixtures:

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>CAS number</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Propane</td>
<td>74-98-6</td>
<td>87.5-100</td>
</tr>
<tr>
<td>Propylene</td>
<td>115-07-1</td>
<td>0-10</td>
</tr>
</tbody>
</table>
Additives

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>CAS number</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethyl Mercaptan</td>
<td>75-08-1</td>
<td>&lt;0.005</td>
</tr>
</tbody>
</table>

Composition comments

Gas concentrations are in percent by volume.

4. First-aid measures

Inhalation

Remove from further exposure. For those providing assistance, avoid exposure to yourself or others. Use adequate respiratory protection. If respiratory tract irritation, dizziness, nausea, or unconsciousness occurs, seek immediate medical assistance. If breathing has stopped, assist ventilation with a mechanical device or use mouth-to-mouth resuscitation.

Skin contact

Not likely, due to the form of the product. If frostbite occurs, immerse affected area in warm water (not exceeding 105°F/41°C). Keep immersed for 20 to 40 minutes. Get medical attention immediately.

Eye contact

Not likely, due to the form of the product. If frostbite occurs, immediately flush eyes with plenty of warm water (not exceeding 105°F/41°C) for at least 15 minutes. If easy to do, remove contact lenses. Get medical attention promptly if symptoms persist or occur after washing.

Ingestion

This material is a gas under normal atmospheric conditions and ingestion is unlikely.

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. Symptoms may include loss of mobility/consciousness. Victim may not be aware of asphyxiation. Asphyxiation may bring about unconsciousness without warning and so rapidly that victim may be unable to protect themselves.

Indication of immediate medical attention and special treatment needed

Exposure may aggravate pre-existing respiratory disorders. Provide general supportive measures and treat symptomatically.

General information

If you feel unwell, seek medical advice (show the label where possible). 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 powder. Carbon dioxide (CO2). Water fog. Foam.

Unsuitable extinguishing media

Do not use water jet as an extinguisher, as this will spread the fire.

Specific hazards arising from the chemical

Extremely flammable gas. Vapors may form explosive mixtures with air. Vapors may travel considerable distance to a source of ignition and flash back. During fire, gases hazardous to health may be formed.

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

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.

Specific methods

Use standard firefighting procedures and consider the hazards of other involved materials. Cool containers exposed to flames with water until well after the fire is out.

General fire hazards

Extremely flammable gas. Contents under pressure. Pressurized container may explode when exposed to heat or flame.

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. In the event of a leak evacuate all personnel until ventilation can restore oxygen concentrations to safe levels. Keep unnecessary personnel away. Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ventilate closed spaces before entering them. Wear appropriate personal protective equipment (See Section 8).
**Methods and materials for containment and cleaning up**
Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). Keep combustibles (wood, paper, oil, etc.) away from spilled material. Stop leak if you can do so without risk. If possible, turn leaking containers so that gas escapes rather than liquid. Isolate area until gas has dispersed. For waste disposal, see section 13 of the SDS.

**Environmental precautions**
Should not be released into the environment. Prevent further leakage or spillage if safe to do so.

**7. Handling and storage**

**Precautions for safe handling**
Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Do not handle, store or open near an open flame, sources of heat or sources of ignition. Protect material from direct sunlight. All equipment used when handling the product must be grounded. Do not breathe gas. Avoid prolonged exposure. Do not enter storage areas or confined spaces unless adequately ventilated. Use only outdoors or in a well-ventilated area. Oxygen concentration should not fall below 19.5 % at sea level (pO2 = 135 mmHg). Mechanical ventilation or local exhaust ventilation may be required. Wear appropriate personal protective equipment. Observe good industrial hygiene practices.

**Conditions for safe storage, including any incompatibilities**
Store at temperatures not exceeding 49°C/120°F. Keep away from heat, sparks and open flame. Prevent electrostatic charge build-up by using common bonding and grounding techniques. Store in a cool, dry place out of direct sunlight. Cylinders should be stored upright, with valve protection cap in place, and firmly secured to prevent falling or being knocked over. Protect cylinders from damage. Stored containers should be periodically checked for general condition and leakage. Store in original tightly closed container. Keep container tightly closed. Store in a well-ventilated place. Use care in handling/storage. Store away from incompatible materials (see Section 10 of the SDS).

**8. Exposure controls/personal protection**

**Occupational exposure limits**

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

<table>
<thead>
<tr>
<th>Components</th>
<th>Type</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Propane (CAS 74-98-6)</td>
<td>PEL</td>
<td>1800 mg/m3</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1000 ppm</td>
</tr>
<tr>
<td>Additives</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ethyl Mercaptan (CAS 75-08-1)</td>
<td>Ceiling</td>
<td>25 mg/m3</td>
</tr>
<tr>
<td></td>
<td></td>
<td>10 ppm</td>
</tr>
</tbody>
</table>

**US. ACGIH Threshold Limit Values**

<table>
<thead>
<tr>
<th>Components</th>
<th>Type</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Butane (CAS 106-97-8)</td>
<td>STEL</td>
<td>1000 ppm</td>
</tr>
<tr>
<td>Propylene (CAS 115-07-1)</td>
<td>TWA</td>
<td>500 ppm</td>
</tr>
<tr>
<td>Additives</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ethyl Mercaptan (CAS 75-08-1)</td>
<td>TWA</td>
<td>0.5 ppm</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Components</th>
<th>Type</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Butane (CAS 106-97-8)</td>
<td>TWA</td>
<td>1900 mg/m3</td>
</tr>
<tr>
<td></td>
<td></td>
<td>800 ppm</td>
</tr>
<tr>
<td>Propane (CAS 74-98-6)</td>
<td>TWA</td>
<td>1800 mg/m3</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1000 ppm</td>
</tr>
<tr>
<td>Additives</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ethyl Mercaptan (CAS 75-08-1)</td>
<td>Ceiling</td>
<td>1.3 mg/m3</td>
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<tr>
<td></td>
<td></td>
<td>0.5 ppm</td>
</tr>
</tbody>
</table>

**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. Neoprene or nitrile gloves are recommended.

**Skin protection**

**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

- **Physical state**: Colorless gas.
- **Form**: Gas (Liquefied).
- **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.

### Flash point

-155.2 °F (-104.0 °C)

### Vapor pressure

127 psig (21°C / 70°F)

### Auto-ignition temperature

809.6 °F (432 °C)

### Decomposition temperature

Not available.

### Viscosity

Not applicable.

### Other information

- **Explosive properties**: Not explosive.
- **Molecular weight**: 45 g/mol
- **Oxidizing properties**: Not oxidizing.
- **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. May form explosive mixture with air.
Avoid heat, sparks, open flames and other ignition sources. Avoid temperatures exceeding the flash point. Contact with incompatible materials.

Incompatible materials

Hazardous decomposition products
Thermal decomposition of this product can generate carbon monoxide and carbon dioxide. Hydrocarbons.

11. Toxicological information

Information on likely routes of exposure

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.

Ingestion
This material is a gas under normal atmospheric conditions and ingestion is unlikely.

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. Victim may not be aware of asphyxiation. Asphyxiation may bring about unconsciousness without warning and so rapidly that victim may be unable to protect themselves.

Information on toxicological effects

Acute toxicity
Not expected to be acutely toxic.

<table>
<thead>
<tr>
<th>Components</th>
<th>Species</th>
<th>Test Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Propane (CAS 74-98-6)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Acute</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inhalation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>LC50</td>
<td>Rat</td>
<td>1355 mg/l</td>
</tr>
<tr>
<td>Propylene (CAS 115-07-1)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Acute</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inhalation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>LC50</td>
<td>Mouse</td>
<td>680 mg/l, 2 Hours</td>
</tr>
<tr>
<td></td>
<td>Rat</td>
<td>658 mg/l, 4 Hours</td>
</tr>
</tbody>
</table>

Skin corrosion/irritation
Not classified.

Serious eye damage/eye irritation
Not classified.

Respiratory or skin sensitization

Respiratory sensitization
Not a respiratory sensitizer.

Skin sensitization
This product is not expected to cause skin sensitization.

Germ cell mutagenicity
No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.

Carcinogenicity
This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA.

IARC Monographs. Overall Evaluation of Carcinogenicity
Propylene (CAS 115-07-1) 3 Not classifiable as to carcinogenicity to humans.

NTP Report on Carcinogens
Not listed.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)
Not regulated.

Reproductive toxicity
This product is not expected to cause reproductive or developmental effects.

Specific target organ toxicity - single exposure
Not classified.

Specific target organ toxicity - repeated exposure
Not classified.

Aspiration hazard
Not likely, due to the form of the product.

Further information
Exposure over a long period of time may cause central nervous system effects.
12. Ecological information

Ecotoxicity
The product is not expected to be hazardous to the environment.

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: 1.77
- Propylene (CAS 115-07-1): 1.77

Mobility in soil
Not relevant, due to the form of the product.

Other adverse effects
The product contains volatile organic compounds which have a photochemical ozone creation potential.

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.

Local disposal regulations
Dispose of in accordance with local regulations.

Hazardous waste code
D001: Waste Flammable material with a flash point <140 °F
The waste code should be assigned in discussion between the user, the producer and the waste disposal company.

Waste from residues / unused products
Dispose in accordance with all applicable regulations.

Contaminated packaging
Empty containers should be taken to an approved waste handling site for recycling or disposal.

14. Transport information

DOT

<table>
<thead>
<tr>
<th>UN number</th>
<th>UN1075</th>
</tr>
</thead>
<tbody>
<tr>
<td>UN proper shipping name</td>
<td>Petroleum Gases, Liquified</td>
</tr>
<tr>
<td>Transport hazard class(es)</td>
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<tr>
<td>Class</td>
<td>2.1</td>
</tr>
<tr>
<td>Subsidiary risk</td>
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<td>Label(s)</td>
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<tr>
<td>Packing group</td>
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</tr>
<tr>
<td>Environmental hazards</td>
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</tr>
<tr>
<td>Marine pollutant</td>
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<tr>
<td>Special precautions for user</td>
<td>Read safety instructions, SDS and emergency procedures before handling.</td>
</tr>
<tr>
<td>Special provisions</td>
<td>19, T50</td>
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<tr>
<td>Packaging exceptions</td>
<td>306</td>
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<tr>
<td>Packaging non bulk</td>
<td>304</td>
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<tr>
<td>Packaging bulk</td>
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IATA

<table>
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<th>UN number</th>
<th>UN1075</th>
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<tr>
<td>UN proper shipping name</td>
<td>Petroleum Gases, Liquified</td>
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<td>Transport hazard class(es)</td>
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</tr>
<tr>
<td>Class</td>
<td>2.1</td>
</tr>
<tr>
<td>Subsidiary risk</td>
<td>-</td>
</tr>
<tr>
<td>Packing group</td>
<td>Not applicable.</td>
</tr>
<tr>
<td>Environmental hazards</td>
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<tr>
<td>ERG Code</td>
<td>10L</td>
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<tr>
<td>Special precautions for user</td>
<td>Read safety instructions, SDS and emergency procedures before handling.</td>
</tr>
</tbody>
</table>

IMDG

<table>
<thead>
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<th>UN number</th>
<th>UN1075</th>
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<tbody>
<tr>
<td>UN proper shipping name</td>
<td>Petroleum Gases, Liquified</td>
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<tr>
<td>Transport hazard class(es)</td>
<td></td>
</tr>
<tr>
<td>Class</td>
<td>2.1</td>
</tr>
<tr>
<td>Subsidiary risk</td>
<td>-</td>
</tr>
<tr>
<td>Packing group</td>
<td>Not applicable.</td>
</tr>
<tr>
<td>Environmental hazards</td>
<td>No</td>
</tr>
<tr>
<td>Marine pollutant</td>
<td>No</td>
</tr>
</tbody>
</table>
Read safety instructions, SDS and emergency procedures before handling.

Not applicable.

Avoid transport on vehicles where the load space is not separated from the driver's compartment. Ensure vehicle driver is aware of the potential hazards of the load and knows what to do in the event of an accident or an emergency. Before transporting product containers: Ensure that containers are firmly secured. Ensure cylinder valve is closed and not leaking. Ensure valve outlet cap nut or plug (where provided) is correctly fitted. Ensure valve protection device (where provided) is correctly fitted. Ensure adequate ventilation. Ensure compliance with applicable regulations.

15. Regulatory information

This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200. All components are on the U.S. EPA TSCA Inventory List.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)
Not regulated.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)
Not regulated.

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)
- Immediate Hazard - Yes
- 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)
<table>
<thead>
<tr>
<th>Chemical name</th>
<th>CAS number</th>
<th>% by wt.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Propylene</td>
<td>115-07-1</td>
<td>0-10</td>
</tr>
</tbody>
</table>

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)

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**
California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65): This material is not known to contain any chemicals currently listed as carcinogens or reproductive toxins.

**International Inventories**

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

*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** 09-August-2016
**Version #** 02

**Further information**
The classification for health and environmental hazards is derived by a combination of calculation methods and test data, if available.

**HMIS® ratings**
- Health: 1
- Flammability: 4
- Physical hazard: 1

**NFPA ratings**

**List of abbreviations**
- STEL: Short term exposure limit.
- TWA: Time weighted average.
- PEL: Permissible Exposure Limit.
- LC50: Lethal Concentration, 50%.

**References**
- EPA: AQUIRE database
- NLM: Hazardous Substances Data Base
- HSDB® - Hazardous Substances Data Bank
- IARC Monographs. Overall Evaluation of Carcinogenicity
- National Toxicology Program (NTP) Report on Carcinogens
- ACGIH Documentation of the Threshold Limit Values and Biological Exposure Indices
Disclaimer

All information in this Safety Data Sheet is believed to be accurate and reliable. However, no guarantee or warranty of any kind is made with regard to the accuracy of information or the suitability of the recommendations contained herein. It is the user's responsibility to assess the safety and toxicity of this product under their own conditions of use and to comply with all applicable laws and regulations.

This SDS contains revisions in the following section(s):