

# 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** 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

Chemical name	CAS number	%
Propane	74-98-6	87.5-100
Propylene	115-07-1	0-10

Ethane	74-84-0	0-7
Butane	106-97-8	0-2.5

#### Additives

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

**Composition comments** Gas concentrations are in percent by volume.

## 4. First-aid measures

<b>Inhalation</b>	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.
<b>Skin contact</b>	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.
<b>Eye contact</b>	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.
<b>Ingestion</b>	This material is a gas under normal atmospheric conditions and ingestion is unlikely.
<b>Most important symptoms/effects, acute and delayed</b>	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.
<b>Indication of immediate medical attention and special treatment needed</b>	Exposure may aggravate pre-existing respiratory disorders. Provide general supportive measures and treat symptomatically.
<b>General information</b>	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

<b>Suitable extinguishing media</b>	Dry chemical powder. Carbon dioxide (CO <sub>2</sub> ). Water fog. Foam.
<b>Unsuitable extinguishing media</b>	Do not use water jet as an extinguisher, as this will spread the fire.
<b>Specific hazards arising from the chemical</b>	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.
<b>Special protective equipment and precautions for firefighters</b>	Self-contained breathing apparatus and full protective clothing must be worn in case of fire.
<b>Fire fighting equipment/instructions</b>	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.
<b>Specific methods</b>	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.
<b>General fire hazards</b>	Extremely flammable gas. Contents under pressure. Pressurized container may explode when exposed to heat or flame.

## 6. Accidental release measures

<b>Personal precautions, protective equipment and emergency procedures</b>	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).
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**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 (pO<sub>2</sub> = 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)**

Components	Type	Value
Propane (CAS 74-98-6)	PEL	1800 mg/m <sup>3</sup> 1000 ppm
Additives	Type	Value
Ethyl Mercaptan (CAS 75-08-1)	Ceiling	25 mg/m <sup>3</sup> 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/m <sup>3</sup> 800 ppm
Propane (CAS 74-98-6)	TWA	1800 mg/m <sup>3</sup> 1000 ppm
Additives	Type	Value
Ethyl Mercaptan (CAS 75-08-1)	Ceiling	1.3 mg/m <sup>3</sup> 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.

<b>Skin protection</b>	
<b>Hand protection</b>	Wear appropriate chemical resistant gloves. Neoprene or nitrile gloves are recommended.
<b>Skin protection</b>	
<b>Other</b>	Wear protective clothing appropriate for the risk of exposure.
<b>Respiratory protection</b>	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.
<b>Thermal hazards</b>	Contact with liquefied gas might cause frostbites, in some cases with tissue damage. Wear appropriate thermal protective clothing, when necessary.
<b>General hygiene considerations</b>	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

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

## 10. Stability and reactivity

<b>Reactivity</b>	Reacts violently with strong oxidants, nitrites, inorganic chlorides, chlorites and perchlorates causing fire and explosion hazard.
<b>Chemical stability</b>	Stable under normal temperature conditions and recommended use.
<b>Possibility of hazardous reactions</b>	Polymerization will not occur. May form explosive mixture with air.

<b>Conditions to avoid</b>	Avoid heat, sparks, open flames and other ignition sources. Avoid temperatures exceeding the flash point. Contact with incompatible materials.
<b>Incompatible materials</b>	Strong oxidizing agents. Strong acids. Halogens. Nitrates.
<b>Hazardous decomposition products</b>	Thermal decomposition of this product can generate carbon monoxide and carbon dioxide. Hydrocarbons.

## 11. Toxicological information

### Information on likely routes of exposure

<b>Inhalation</b>	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.
<b>Skin contact</b>	Contact with liquefied gas may cause frostbite.
<b>Eye contact</b>	Contact with liquefied gas may cause frostbite.
<b>Ingestion</b>	This material is a gas under normal atmospheric conditions and ingestion is unlikely.

<b>Symptoms related to the physical, chemical and toxicological characteristics</b>	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.
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### Information on toxicological effects

<b>Acute toxicity</b>	Not expected to be acutely toxic.
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Components	Species	Test Results
Propane (CAS 74-98-6)		
<b>Acute</b>		
<i>Inhalation</i>		
LC50	Rat	1355 mg/l
Propylene (CAS 115-07-1)		
<b>Acute</b>		
<i>Inhalation</i>		
LC50	Mouse	680 mg/l, 2 Hours
	Rat	658 mg/l, 4 Hours

<b>Skin corrosion/irritation</b>	Not classified.
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<b>Serious eye damage/eye irritation</b>	Not classified.
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### Respiratory or skin sensitization

<b>Respiratory sensitization</b>	Not a respiratory sensitizer.
<b>Skin sensitization</b>	This product is not expected to cause skin sensitization.

<b>Germ cell mutagenicity</b>	No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.
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<b>Carcinogenicity</b>	This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA.
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#### IARC Monographs. Overall Evaluation of Carcinogenicity

Propylene (CAS 115-07-1)	3 Not classifiable as to carcinogenicity to humans.
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#### NTP Report on Carcinogens

Not listed.

#### OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not regulated.

<b>Reproductive toxicity</b>	This product is not expected to cause reproductive or developmental effects.
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<b>Specific target organ toxicity - single exposure</b>	Not classified.
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<b>Specific target organ toxicity - repeated exposure</b>	Not classified.
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<b>Aspiration hazard</b>	Not likely, due to the form of the product.
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<b>Further information</b>	Exposure over a long period of time may cause central nervous system effects.
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## 12. Ecological information

<b>Ecotoxicity</b>	The product is not expected to be hazardous to the environment.
<b>Persistence and degradability</b>	The product is readily biodegradable.
<b>Bioaccumulative potential</b>	The product is not expected to bioaccumulate.
<b>Partition coefficient n-octanol / water (log K<sub>ow</sub>)</b>	
Propane	1.77
Propylene (CAS 115-07-1)	1.77
<b>Mobility in soil</b>	Not relevant, due to the form of the product.
<b>Other adverse effects</b>	The product contains volatile organic compounds which have a photochemical ozone creation potential.

## 13. Disposal considerations

<b>Disposal instructions</b>	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.
<b>Local disposal regulations</b>	Dispose of in accordance with local regulations.
<b>Hazardous waste code</b>	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.
<b>Waste from residues / unused products</b>	Dispose in accordance with all applicable regulations.
<b>Contaminated packaging</b>	Empty containers should be taken to an approved waste handling site for recycling or disposal.

## 14. Transport information

### DOT

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

### IATA

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

### IMDG

<b>UN number</b>	UN1075
<b>UN proper shipping name</b>	Petroleum Gases, Liquified
<b>Transport hazard class(es)</b>	
<b>Class</b>	2.1
<b>Subsidiary risk</b>	-
<b>Packing group</b>	Not applicable.
<b>Environmental hazards</b>	
<b>Marine pollutant</b>	No

<b>EmS</b>	F-D, S-U
<b>Special precautions for user</b>	Read safety instructions, SDS and emergency procedures before handling.
<b>Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code</b>	Not applicable.
<b>General information</b>	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

<b>US federal regulations</b>	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.
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### 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)

<b>Hazard categories</b>	Immediate Hazard - Yes Delayed Hazard - No Fire Hazard - Yes Pressure Hazard - Yes Reactivity Hazard - No
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### SARA 302 Extremely hazardous substance

Not listed.

<b>SARA 311/312 Hazardous chemical</b>	Yes
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### SARA 313 (TRI reporting)

Chemical name	CAS number	% by wt.
Propylene	115-07-1	0-10

### 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)

<b>Safe Drinking Water Act (SDWA)</b>	Not regulated.
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### 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

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	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):**

1 - 16