



# SAFETY DATA SHEET

SDS ID NO.: 0105MAR019  
Revision Date 05/14/2015

## 1. IDENTIFICATION

**Product Name:** Marathon Petroleum Butane - All Grades  
**Synonym:** Butane; N-Butane; Refinery Grade Butane; 0106MAR019  
**Product Code:** 0105MAR019  
**Chemical Family:** Hydrocarbon Gas  
**Recommended Use:** Chemical intermediate.  
**Restrictions on Use:** All others.

**Manufacturer, Importer, or Responsible Party Name and Address:**  
**MARATHON PETROLEUM COMPANY LP**  
**539 South Main Street**  
**Findlay, OH 45840**

**SDS information:** 1-419-421-3070  
**Emergency Telephone:** 1-877-627-5463

## 2. HAZARD IDENTIFICATION

### Classification

#### **OSHA Regulatory Status**

This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Flammable gases	Category 1
Gases under pressure	Liquefied Gas
Simple Asphyxiant	-
Germ cell mutagenicity	Category 1B
Carcinogenicity	Category 1A
Reproductive toxicity	Category 2
Specific target organ toxicity (single exposure)	Category 3
Acute aquatic toxicity	Category 2
Chronic aquatic toxicity	Category 2

#### **Hazards Not Otherwise Classified (HNOC)**

Static accumulating flammable liquid  
Liquid product may cause freeze burn

### Label elements

#### **EMERGENCY OVERVIEW**

#### **Danger**

Extremely flammable gas  
Contains gas under pressure; may explode if heated

May accumulate electrostatic charge and ignite or explode  
 May displace oxygen and cause rapid suffocation  
 Contact with liquid product may cause freeze burn.  
 May cause drowsiness or dizziness  
 May cause genetic defects  
 May cause cancer  
 Suspected of damaging fertility or the unborn child  
 Toxic to aquatic life with long lasting effects



**Appearance** Colorless Liquefied Gas

**Physical State** Liquefied Gas

**Odor** Faint

#### Precautionary Statements - Prevention

Obtain special instructions before use  
 Do not handle until all safety precautions have been read and understood  
 Keep away from heat/sparks/open flames/hot surfaces. - No smoking  
 Wear protective gloves/protective clothing/eye protection/face protection  
 Avoid breathing gas/vapors  
 Use only outdoors or in a well-ventilated area  
 Avoid release to the environment

#### Precautionary Statements - Response

IF exposed or concerned: Get medical attention  
 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing  
 Call a POISON CENTER or doctor if you feel unwell  
 Leaking gas fire: Do not extinguish, unless leak can be stopped safely  
 Eliminate all ignition sources if safe to do so  
 Collect spillage

#### Precautionary Statements - Storage

Store in a well-ventilated place. Keep container tightly closed  
 Protect from sunlight  
 Store locked up

#### Precautionary Statements - Disposal

Dispose of contents/container at an approved waste disposal plant

### 3. COMPOSITION/INFORMATION ON INGREDIENTS

#### Composition Information:

Name	CAS Number	% Concentration
n-Butane	106-97-8	30-99
Isobutane	75-28-5	0-43
Isopentane	78-78-4	0-30
Butenes	25167-67-3	0-23
n-Pentane	109-66-0	0-18
Propane	74-98-6	0-8
Isobutylene	115-11-7	0-8
Propylene	115-07-1	0-6.5
2,2-dimethylpropane	463-82-1	0-1.5
n-Hexane	110-54-3	0-0.25
1,3-Butadiene	106-99-0	0-0.2

Benzene	71-43-2	0-0.2
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All concentrations are percent by weight unless material is a gas. Gas concentrations are in percent by volume.

## 4. FIRST AID MEASURES

### First Aid Measures

- General Advice:** In case of accident or if you feel unwell, seek medical advice immediately (show directions for use or safety data sheet if possible).
- Inhalation:** Remove to fresh air. If not breathing, institute rescue breathing. If breathing is difficult, ensure airway is clear, give oxygen and continue to monitor. If heart has stopped, immediately begin cardiopulmonary resuscitation (CPR). GET IMMEDIATE MEDICAL ATTENTION.
- Skin Contact:** If liquefied product has caused frostbite, remove contaminated clothing. Thaw frost bitten areas slowly with lukewarm water or by wrapping affected areas with blankets. Do not rub affected areas. Let circulation reestablish itself naturally, exercising area if possible. GET IMMEDIATE MEDICAL ATTENTION.
- Eye Contact:** Liquid: Flush with large amounts of tepid water for at least 15 minutes. If frostbite is suspected (cloudy lens or greyish white tissue around the eye), GET IMMEDIATE MEDICAL ATTENTION.  
Gas: Call a physician if signs or symptoms of contact occur, including irritation.
- Ingestion:** Ingestion not likely. If swallowed, immediately call a poison control center or physician.

### Most important signs and symptoms, both short-term and delayed with overexposure

- Adverse Effects:** Asphyxiant gas. High concentrations in the immediate area can displace oxygen causing the feeling of suffocation and can cause headache, drowsiness, dizziness, loss of coordination, disorientation and fatigue from oxygen deprivation.

### Indication of any immediate medical attention and special treatment needed

- Notes To Physician:** Treat symptomatically. Administer supplemental oxygen as needed. Epinephrine and other sympathomimetic drugs may initiate cardiac arrhythmias in individuals exposed to this material. Administration of sympathomimetic drugs should be avoided.

## 5. FIRE-FIGHTING MEASURES

### **Suitable extinguishing media**

For small fires, Class B fire extinguishing media such as CO<sub>2</sub> or dry chemical can be used. For large fires use water spray or fog. Firefighting should be attempted only by those who are adequately trained and equipped with proper protective equipment.

### **Unsuitable extinguishing media**

DO NOT EXTINGUISH A LEAKING GAS FIRE UNLESS LEAK CAN BE STOPPED.

### **Specific hazards arising from the chemical**

This product has been determined to be an extremely flammable gas per the OSHA Hazard Communication Standard and should be handled accordingly. May accumulate electrostatic charge and ignite or explode. Sealed containers may rupture when heated. A phenomena known as boiling liquid expanding vapor explosions (BLEVE) can occur when a liquid in a pressurized container comes in close proximity to a fire and reaches a temperature well above its boiling point. A catastrophic failure of the vessel can occur, resulting in flying equipment fragments, a shock wave and a fireball causing serious damage and death. For additional fire related information see NFPA 30 or the Emergency Response Guidebook 115.

### **Hazardous combustion products**

Smoke, carbon monoxide, and other products of incomplete combustion.

### **Explosion data**

**Sensitivity to Mechanical Impact** No.  
**Sensitivity to Static Discharge** Yes.

#### Special protective equipment and precautions for firefighters

Firefighters should wear full protective clothing and positive-pressure self-contained breathing apparatus (SCBA) with a full face-piece, as appropriate. Isolate hazard area. If safe to do so, stop the flow of gas and allow fire to burn out. Extinguishing the flame before shutting off the supply can cause the formation of explosive mixtures. In some cases it may be preferred to allow the flame to continue to burn. Use extreme caution when fighting liquefied petroleum gas fires. Keep surrounding area cool with water spray from a distance and prevent further ignition of combustible material. Avoid use of solid water streams. Contact with water and liquefied product can cause increased vaporization.

#### Additional firefighting tactics

FIRES INVOLVING TANKS OR CAR/TRAILER LOADS: Fight fire from maximum distance or use unmanned hose holders or monitor nozzles. Cool containers with flooding quantities of water until well after the fire is out. Do not direct water at source of leak or safety devices; icing may occur. Withdraw immediately in case of rising sound from venting safety devices or discoloration of tank. ALWAYS stay away from tanks engulfed in fire. For massive fire, use unmanned hose holders or monitor nozzles; if this is impossible, withdraw from area and let fire burn.

EVACUATION: Consider initial downwind evacuation for at least 1000 feet. If tank, rail car or tank truck is involved in a fire, ISOLATE for 5280 feet (1 mile) in all directions; also, consider initial evacuation of 5280 feet (1 mile) in all directions.

**NFPA** Health 1 Flammability 4 Instability 1 Special Hazard -

## 6. ACCIDENTAL RELEASE MEASURES

<b>Personal precautions:</b>	Keep people away from and upwind of spill/leak. Isolate and evacuate area. Shut off source if safe to do so. Distant ignition and flashback are possible. Eliminate all ignition sources. Use grounded and bonded, explosion-proof equipment. Monitor area for flammable or explosive atmosphere. Before entry, especially into confined areas, check atmosphere with an appropriate monitor.
<b>Protective equipment:</b>	Use personal protection measures as recommended in Section 8.
<b>Emergency procedures:</b>	Leaking containers should be moved outdoors or to well-ventilated area and contents transferred to a suitable container. Product vapor is heavier than air and can collect in low areas that are without sufficient ventilation. Notify local health and pollution control agencies, if appropriate.
<b>Environmental precautions:</b>	If leaking, take appropriate steps to disperse gas.
<b>Methods and materials for containment:</b>	Prevent further leakage or spillage if safe to do so.
<b>Methods and materials for cleaning up:</b>	Shut off gas supply, if safe to do so. Allow equipment to depressurize. Isolate area until gas has dispersed.

## 7. HANDLING AND STORAGE

<b>Safe Handling Precautions:</b>	Avoid breathing gas or mists. Use only with adequate ventilation. Gas may accumulate along the ground, settle in low lying areas or be moved by ventilation and ignited by many sources such as pilot lights, sparks, electric motors, static discharge, or other ignition sources at locations distant from material handling. Flashback may occur along vapor trails. Do not expose to heat, open flames, strong oxidizers or other sources of ignition. Use only non-sparking tools. Use appropriate grounding and bonding practices. Bonding and grounding may be insufficient to eliminate the hazard from static electricity. Do not cut, drill, grind or weld on empty containers since explosive residues may remain. Comply with all applicable EPA, OSHA, NFPA and consistent state and local requirements.
<b>Storage Conditions:</b>	Product is stored as a liquid but used in the gaseous state. Store in properly closed containers that are appropriately labeled and in a cool, well-ventilated area. Keep product

and empty container away from heat and sources of ignition. Do not puncture or incinerate container.

**Incompatible Materials**

Strong oxidizing agents.

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Name	ACGIH TLV	OSHA PELs:	OSHA - Vacated PELs	NIOSH IDLH
n-Butane 106-97-8	1000 ppm STEL	-	800 ppm TWA 1900 mg/m <sup>3</sup> TWA	-
Isobutane 75-28-5	1000 ppm STEL	-	-	-
Isopentane 78-78-4	1000 ppm TWA	-	-	-
Butenes 25167-67-3	250 ppm TWA	-	-	-
n-Pentane 109-66-0	1000 ppm TWA	TWA: 1000 ppm TWA: 2950 mg/m <sup>3</sup>	600 ppm TWA 1800 mg/m <sup>3</sup> TWA 750 ppm STEL 2250 mg/m <sup>3</sup> STEL	1500 ppm
Propane 74-98-6	Simple asphyxiant	TWA: 1000 ppm TWA: 1800 mg/m <sup>3</sup>	1000 ppm TWA 1800 mg/m <sup>3</sup> TWA	2100 ppm
Isobutylene 115-11-7	250 ppm TWA	-	-	-
Propylene 115-07-1	500 ppm TWA	-	-	-
2,2-dimethylpropane 463-82-1	1000 ppm TWA	-	-	-
n-Hexane 110-54-3	50 ppm TWA Skin - potential significant contribution to overall exposure by the cutaneous route	TWA: 500 ppm TWA: 1800 mg/m <sup>3</sup>	50 ppm TWA 180 mg/m <sup>3</sup> TWA	1100 ppm
1,3-Butadiene 106-99-0	2 ppm TWA	TWA: 1 ppm STEL: 5 ppm Action level: 0.5 ppm see 29 CFR 1910.1051	1000 ppm TWA 2200 mg/m <sup>3</sup> TWA	2000 ppm
Benzene 71-43-2	0.5 ppm TWA 2.5 ppm STEL Skin - potential significant contribution to overall exposure by the cutaneous route	TWA: 10 ppm (applies to industry segments exempt from the benzene standard) TWA: 1 ppm STEL: 5 ppm (see 29 CFR 1910.1028)	25 ppm Ceiling 1 ppm TWA 5 ppm STEL	500 ppm

**Notes:**

The manufacturer has voluntarily elected to provide exposure limits contained in OSHA's 1989 air contaminants standard in its SDSs, even though certain of those exposure limits were vacated in 1992.

**Engineering measures:**

Local or general exhaust required in an enclosed area or when there is inadequate ventilation. Use mechanical ventilation equipment that is explosion-proof. Monitor atmospheric oxygen levels.

**Personal protective equipment****Eye protection:**

Goggles or faceshield may be needed when handling pressurized gases.

**Skin and body protection:**

Wear insulated gloves to prevent skin contact and frostbite or freeze burn. Contact the glove manufacturer for specific advice on glove selection and breakthrough times.

**Respiratory protection:**

Use atmosphere supplying respirators in the event of oxygen deficiency, when material produces vapors that exceed permissible limits, or when excessive vapors are generated. Observe respirator assigned protection factors (APFs) criteria cited in federal OSHA 29 CFR 1910.134.

Note: Air purifying respirators are not to be used in atmospheres that exceed the maximum use concentration (as directed by regulation or the manufacturers instructions), in oxygen deficient atmospheres, (less than 19.5% oxygen) or under conditions that are immediately dangerous to life and health (IDLH).

**Hygiene measures:** Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes and clothing. Do not smoke while handling.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

### Information on basic physical and chemical properties

<b>Physical State</b>	Liquefied Gas
<b>Appearance</b>	Colorless Liquefied Gas
<b>Color</b>	Colorless
<b>Odor</b>	Faint
<b>Odor Threshold</b>	No data available.
<b>Property</b>	<b>Values (Method)</b>
<b>Melting Point / Freezing Point</b>	-138 °C / -217 °F
<b>Initial Boiling Point / Boiling Range</b>	-0.5 °C / 31 °F
<b>Flash Point</b>	-60 °C / -76 °F (Closed cup)
<b>Evaporation Rate</b>	No data available.
<b>Flammability (solid, gas)</b>	Gaz extrêmement inflammable
<b>Flammability Limit in Air (%):</b>	
<b>Upper Flammability Limit:</b>	9.0
<b>Lower Flammability Limit:</b>	1.5
<b>Explosion limits:</b>	No data available.
<b>Vapor Pressure</b>	32.0-53.1 psi @ 100°F
<b>Vapor Density</b>	2.1 (Air = 1)
<b>Specific Gravity / Relative Density</b>	0.585
<b>Water Solubility</b>	Soluble
<b>Solubility in other solvents</b>	No data available.
<b>Partition Coefficient</b>	No data available.
<b>Decomposition temperature</b>	No data available.
<b>pH:</b>	Non applicable
<b>Autoignition Temperature</b>	405 °C / 761 °F
<b>Kinematic Viscosity</b>	No data available.
<b>Dynamic Viscosity</b>	No data available.
<b>Explosive Properties</b>	No data available.
<b>VOC Content (%)</b>	No data available.
<b>Density</b>	36.48 lb/ft <sup>3</sup>
<b>Bulk Density</b>	Non applicable

## 10. STABILITY AND REACTIVITY

<b><u>Reactivity</u></b>	The product is non-reactive under normal conditions.
<b><u>Chemical stability</u></b>	The material is stable at 70°F (21°C), 760 mmHg pressure.
<b><u>Possibility of hazardous reactions</u></b>	None under normal processing.
<b><u>Hazardous polymerization</u></b>	Does not polymerize except under special conditions (extreme temperatures, pressure, oxidizers).
<b><u>Conditions to avoid</u></b>	Sources of heat or ignition.
<b><u>Incompatible Materials</u></b>	Strong oxidizing agents.
<b><u>Hazardous decomposition products</u></b>	None known under normal conditions of use.

## 11. TOXICOLOGICAL INFORMATION

### Potential short-term adverse effects from overexposures

<b>Inhalation</b>	May cause central nervous system depression with nausea, headache, dizziness, vomiting, and incoordination. In high concentration the gas may cause suffocation. Victim may not be aware of asphyxiation.
<b>Eye contact</b>	Gas or vapor is generally non-irritating to eyes. Direct contact with liquefied product can cause freeze burn or frostbite.
<b>Skin contact</b>	Gas or vapor is generally non-irritating to skin. Direct contact with liquefied product can cause freeze burn or frostbite.
<b>Ingestion</b>	Ingestion not likely.

### Acute toxicological data

Name	Oral LD50	Dermal LD50	Inhalation LC50
n-Butane 106-97-8	-	-	658 mg/L (Rat) 4 h
Isobutane 75-28-5	-	-	570,000 ppm (Rat) 15 min
Isopentane 78-78-4	-	-	450 mg/L (Mouse) 2 h
Butenes 25167-67-3	-	-	658 mg/L (Rat) 4 h
n-Pentane 109-66-0	-	-	364 mg/L (Rat) 4 h
Propane 74-98-6	-	-	> 1,464 mg/L (Rat) 15 min
Isobutylene 115-11-7	620 mg/kg (Rat)	-	-
Propylene 115-07-1	-	-	658 mg/L (Rat) 4 h
2,2-dimethylpropane 463-82-1	-	-	-
n-Hexane 110-54-3	15000 mg/kg (Rat)	3000 mg/kg (Rabbit)	48000 ppm (Rat) 4 h
1,3-Butadiene 106-99-0	5480 mg/kg (Rat)	-	285 g/m <sup>3</sup> (Rat) 4 h
Benzene 71-43-2	> 2000 mg/kg (Rat)	> 5000 mg/kg (Rabbit)	> 20 mg/l (Rat) 4 h

### Delayed and immediate effects as well as chronic effects from short and long-term exposure

**BUTANES:** Studies in laboratory animals indicate exposure to extremely high levels of butanes (1-10 or higher vol.% in air) may cause cardiac arrhythmias (irregular heartbeats) which may be serious or fatal.

**PENTANES:** Studies of pentane isomers in laboratory animals indicate exposure to extremely high levels (roughly 10 vol.%) may induce cardiac arrhythmias (irregular heartbeats) which may be serious or fatal.

**PROPYLENE:** At extremely high levels propylene gas acts as a general anesthetic and central nervous system depressant. Studies in laboratory animals indicate evidence of mild, reversible hydrocarbon nephropathy in male rats exposed to levels of 1000-4,500 ppm propylene for 90-days. The International Agency for Research in Cancer (IARC) has determined that there is inadequate evidence in experimental animals for the carcinogenicity of propylene. Overall evaluation: Propylene is not classifiable as to its carcinogenicity to humans (Group 3).

PROPANE: Studies in laboratory animals indicate exposure to extremely high levels of propane (1 to 10 vol.% in air) may cause cardiac arrhythmias (irregular heartbeats) which may be serious or fatal.

N-HEXANE: Overexposure to n-hexane may cause progressive and potentially irreversible damage to the peripheral nervous system, particularly in the arms and legs. Initial symptoms are numbness of the fingers and toes. Also, motor weakness can occur in the digits, but may also involve muscles of the arms, thighs and forearms. The onset of these symptoms may be delayed for several months to a year after the beginning of the overexposures. Irreversible testicular atrophy was observed in long-term, repeated inhalation exposure studies of laboratory animals. Exposing maternal laboratory animals to high levels of n-hexane has produced reduced weight in the developing offspring but no birth defects.

1,3-BUTADIENE: Studies of workers show evidence that overexposure may be associated with an increased incidence of cancers of lymphohematopoietic organ systems, including leukemia. Studies in laboratory animals indicate that prolonged, repeated exposure to high levels of butadiene can cause cancer in multiple organs including lymphohematopoietic organ systems, and chromosome damage to somatic and germ cells. Some animal studies also show limited evidence that exposure to butadiene may induce heritable mutations. Studies in laboratory mice show evidence of adverse effects on female reproductive organs (ovaries). Studies in laboratory rats show evidence of adverse effects on the testes only at high levels of exposure. Embryotoxicity has been reported. Effects included increased rates of fetal death and skeletal variation. The International Agency for Research on Cancer (IARC) has classified 1,3-butadiene as a Group 1 - Carcinogenic to Humans.

BENZENE: Studies of workers exposed to benzene show clear evidence that overexposure can cause cancer and other diseases of the blood forming organs including Acute Myelogenous Leukemia (AML), and Aplastic Anemia (AA), an often fatal disease. Some studies suggest overexposure to benzene may also be associated with Myelodysplastic Syndrome (MDS). Findings from a case control study of workers exposed to benzene was reported during the 2009 Benzene Symposium in Munich included an increase in Acute Myeloid Leukemias and Non-Hodgkins Lymphoid Neoplasms (NHLN) of the subtype follicular lymphoma (FL) in some occupational categories. Some studies of workers exposed to benzene have shown an association with increased rates of chromosome aberrations in circulating lymphocytes. One study of women workers exposed to benzene suggested a weak association with irregular menstruation. However, other studies of workers exposed to benzene have not demonstrated clear evidence of an effect on fertility or reproductive outcome in humans. Benzene can cross the placenta and affect the developing fetus. Cases of AA have been reported in the offspring of persons severely overexposed to benzene. Studies in laboratory animals indicate that prolonged, repeated exposure to high levels of benzene vapor can cause bone marrow suppression and cancer in multiple organ systems. Studies in laboratory animals show evidence of adverse effects on male reproductive organs following high levels of exposure but no significant effects on reproduction have been observed. Embryotoxicity has been reported in studies of laboratory animals but effects were limited to reduced fetal weight and minor skeletal variations. Benzene has been classified as a proven human carcinogen by OSHA and a Group 1 (Carcinogenic to Humans) material by IARC. The current proposed IARC classification for benzene is summarized as follows: Sufficient evidence for Acute Myeloid Leukemia; limited evidence for Acute Lymphatic Leukemia, Chronic Lymphatic Leukemia, Non-Hodgkin Lymphoma, and Multiple Myeloma.

#### **Adverse effects related to the physical, chemical and toxicological characteristics**

<b>Signs and Symptoms</b>	Asphyxiant gas. High concentrations in the immediate area can displace oxygen causing the feeling of suffocation and can cause headache, drowsiness, dizziness, loss of coordination, disorientation and fatigue from oxygen deprivation.
<b>Sensitization</b>	Not expected to be a skin or respiratory sensitizer.
<b>Mutagenic effects</b>	May cause genetic defects.



**Carcinogenicity** May cause cancer.

Cancer designations are listed in the table below

Name	ACGIH (Class)	IARC (Class)	NTP	OSHA
n-Butane 106-97-8	Not Listed	Not Listed	Not Listed	Not Listed
Isobutane 75-28-5	Not Listed	Not Listed	Not Listed	Not Listed
Isopentane 78-78-4	Not Listed	Not Listed	Not Listed	Not Listed
Butenes 25167-67-3	Not Listed	Not Listed	Not Listed	Not Listed
n-Pentane 109-66-0	Not Listed	Not Listed	Not Listed	Not Listed
Propane 74-98-6	Not Listed	Not Listed	Not Listed	Not Listed
Isobutylene 115-11-7	Not classifiable (A4)	Not Listed	Not Listed	Not Listed
Propylene 115-07-1	Not Listed	Not Classifiable (3)	Not Listed	Not Listed
2,2-dimethylpropane 463-82-1	Not Listed	Not Listed	Not Listed	Not Listed
n-Hexane 110-54-3	Not Listed	Not Listed	Not Listed	Not Listed
1,3-Butadiene 106-99-0	Suspected human carcinogen (A2)	Carcinogenic to humans (1)	Known to be human carcinogen	Listed
Benzene 71-43-2	Confirmed human carcinogen (A1)	Carcinogenic to humans (1)	Known to be human carcinogen	Known carcinogen

**Reproductive toxicity** Suspected of damaging fertility or the unborn child.

**Specific Target Organ Toxicity (STOT) - single exposure** Central nervous system.

**Specific Target Organ Toxicity (STOT) - repeated exposure** Not classified.

**Aspiration hazard** Not applicable.

## 12. ECOLOGICAL INFORMATION

**Ecotoxicity** This product should be considered toxic to aquatic organisms, with the potential to cause long lasting adverse effects in the aquatic environment.

Name	Algae/aquatic plants	Fish	Toxicity to Microorganisms	Crustacea
n-Butane 106-97-8	-	-	-	-
Isobutane 75-28-5	-	-	-	-
Isopentane 78-78-4	-	96-hr LC50 = 3.1 mg/L Rainbow trout	-	48-hr EC50 = >1 - <10 mg/L Daphnia magna
Butenes 25167-67-3	-	96-hr LC50 = 19 mg/L Fish	-	48-hr LC50 = 11 mg/l Daphnia
n-Pentane 109-66-0	-	96-hr LC50 >1 - <10 mg/L Rainbow trout	-	48-hr EC50 = 9.7 mg/L Daphnia magna
Propane 74-98-6	-	-	-	-
Isobutylene 115-11-7	-	96-hr LC50 = 22 mg/L Fish	-	-
Propylene 115-07-1	-	-	-	-
2,2-dimethylpropane 463-82-1	-	-	-	-

n-Hexane 110-54-3	-	96-hr LC50 = 2.5 mg/l Fathead minnow	-	-
1,3-Butadiene 106-99-0	-	-	-	-
Benzene 71-43-2	72-hr EC50 = 29 mg/l Algae	96-hr LC50 = 5.3 mg/l Rainbow trout (flow-through)	-	48-hr EC50 = 8.76-15.6 mg/l Daphnia magna (Static)

**Persistence and degradability** Expected to be inherently biodegradable.

**Bioaccumulation** Not expected to bioaccumulate in aquatic organisms.

**Mobility in soil** Expected to rapidly partition to air.

**Other adverse effects** No information available.

### 13. DISPOSAL CONSIDERATIONS

#### Description of Waste Residues

No information available.

#### Safe Handling of Wastes

Handle in accordance with applicable local, state, and federal regulations. Use personal protection measures as required. Use appropriate grounding and bonding practices. Use only non-sparking tools. Do not expose to heat, open flames, strong oxidizers or other sources of ignition. No smoking.

#### Disposal of Wastes / Methods of Disposal

The user is responsible for determining if any discarded material is a hazardous waste (40 CFR 262.11). Dispose of in accordance with federal, state and local regulations.

#### Methods of Contaminated Packaging Disposal

Empty containers should be completely drained and then discarded or recycled, if possible. Do not cut, drill, grind or weld on empty containers since explosive residues may be present. Dispose of in accordance with federal, state and local regulations.

### 14. TRANSPORT INFORMATION

#### DOT (49 CFR 172.101):

**UN Proper Shipping Name:** Liquefied Petroleum Gas  
**UN/Identification No:** UN 1075  
**Class:** 2.1  
**Packing Group:** Not applicable.

#### TDG (Canada):

**UN Proper Shipping Name:** Liquefied Petroleum Gas  
**UN/Identification No:** UN 1075  
**Transport Hazard Class(es):** 2.1  
**Packing Group:** Not applicable.

### 15. REGULATORY INFORMATION

#### US Federal Regulatory Information:

US TSCA Chemical Inventory Section 8(b): This product and/or its components are listed on the TSCA Chemical Inventory.

#### EPA Superfund Amendment & Reauthorization Act (SARA):

**SARA Section 302:** This product does not contain any component(s) included on EPA's Extremely Hazardous Substance (EHS) List.

Name	CERCLA/SARA - Section 302 Extremely Hazardous Substances and TPQs

n-Butane	NA
Isobutane	NA
Isopentane	NA
Butenes	NA
n-Pentane	NA
Propane	NA
Isobutylene	NA
Propylene	NA
2,2-dimethylpropane	NA
n-Hexane	NA
1,3-Butadiene	NA
Benzene	NA

**SARA Section 304:** This product may contain component(s) identified either as an EHS or a CERCLA Hazardous substance which in case of a spill or release may be subject to SARA reporting requirements:

Name	Hazardous Substances RQs
n-Butane	NA
Isobutane	NA
Isopentane	NA
Butenes	NA
n-Pentane	NA
Propane	NA
Isobutylene	NA
Propylene	NA
2,2-dimethylpropane	NA
n-Hexane	5000
1,3-Butadiene	10
Benzene	10

**SARA Section 311/312:** The following EPA hazard categories apply to this product:

Acute Health Hazard  
Chronic Health Hazard  
Fire Hazard  
Sudden Release Of Pressure

**SARA Section 313:** This product may contain component(s), which if in exceedance of the de minimis threshold, may be subject to the reporting requirements of SARA Title III Section 313 Toxic Release Reporting (Form R).

Name	CERCLA/SARA 313 Emission reporting:
n-Butane	None
Isobutane	None
Isopentane	None
Butenes	None
n-Pentane	None
Propane	None
Isobutylene	None
Propylene	1.0 % de minimis concentration
2,2-dimethylpropane	None
n-Hexane	1.0 % de minimis concentration
1,3-Butadiene	0.1 % de minimis concentration
Benzene	0.1 % de minimis concentration

**State and Community Right-To-Know Regulations:**

The following component(s) of this material are identified on the regulatory lists below:

n-Butane  
Louisiana Right-To-Know: Not Listed

California Proposition 65:	Not Listed
New Jersey Right-To-Know:	SN 0273
Pennsylvania Right-To-Know:	Present
Massachusetts Right-To Know:	Present
Florida Substance List:	Not Listed
Rhode Island Right-To-Know:	Toxic; Flammable
Michigan Critical Materials Register List:	Not Listed
Massachusetts Extraordinarily Hazardous Substances:	Not Listed
California - Regulated Carcinogens:	Not Listed
Pennsylvania RTK - Special Hazardous Substances:	Not Listed
New Jersey - Special Hazardous Substances:	Flammable - fourth degree
New Jersey - Environmental Hazardous Substances List:	SN 0273 TPQ: 500 lb
Illinois - Toxic Air Contaminants:	Not Listed
New York - Reporting of Releases Part 597 - List of Hazardous Substances:	Not Listed
Isobutane	
Louisiana Right-To-Know:	Not Listed
California Proposition 65:	Not Listed
New Jersey Right-To-Know:	SN 1040
Pennsylvania Right-To-Know:	Present
Massachusetts Right-To Know:	Present
Florida Substance List:	Not Listed
Rhode Island Right-To-Know:	Not Listed
Michigan Critical Materials Register List:	Not Listed
Massachusetts Extraordinarily Hazardous Substances:	Not Listed
California - Regulated Carcinogens:	Not Listed
Pennsylvania RTK - Special Hazardous Substances:	Not Listed
New Jersey - Special Hazardous Substances:	Flammable - fourth degree
New Jersey - Environmental Hazardous Substances List:	SN 1040 TPQ: 500 lb
Illinois - Toxic Air Contaminants:	Not Listed
New York - Reporting of Releases Part 597 - List of Hazardous Substances:	Not Listed
Isopentane	
Louisiana Right-To-Know:	Not Listed
California Proposition 65:	Not Listed
New Jersey Right-To-Know:	SN 1064
Pennsylvania Right-To-Know:	Present
Massachusetts Right-To Know:	Present
Florida Substance List:	Not Listed
Rhode Island Right-To-Know:	Not Listed
Michigan Critical Materials Register List:	Not Listed
Massachusetts Extraordinarily Hazardous Substances:	Not Listed
California - Regulated Carcinogens:	Not Listed
Pennsylvania RTK - Special Hazardous Substances:	Not Listed
New Jersey - Special Hazardous Substances:	Flammable - fourth degree
New Jersey - Environmental Hazardous Substances List:	SN 1064 TPQ: 500 lb
Illinois - Toxic Air Contaminants:	Not Listed
New York - Reporting of Releases Part 597 - List of Hazardous Substances:	Not Listed
Butenes	
Louisiana Right-To-Know:	Not Listed
California Proposition 65:	Not Listed
New Jersey Right-To-Know:	SN 0286
Pennsylvania Right-To-Know:	Present
Massachusetts Right-To Know:	Not Listed
Florida Substance List:	Not Listed

Rhode Island Right-To-Know:	Flammable
Michigan Critical Materials Register List:	Not Listed
Massachusetts Extraordinarily Hazardous Substances:	Not Listed
California - Regulated Carcinogens:	Not Listed
Pennsylvania RTK - Special Hazardous Substances:	Not Listed
New Jersey - Special Hazardous Substances:	Flammable - fourth degree
New Jersey - Environmental Hazardous Substances List:	SN 0286 TPQ: 500 lb
Illinois - Toxic Air Contaminants:	Not Listed
New York - Reporting of Releases Part 597 - List of Hazardous Substances:	Not Listed
n-Pentane	
Louisiana Right-To-Know:	Not Listed
California Proposition 65:	Not Listed
New Jersey Right-To-Know:	SN 1476
Pennsylvania Right-To-Know:	Present
Massachusetts Right-To Know:	Present
Florida Substance List:	Not Listed
Rhode Island Right-To-Know:	Toxic; Flammable
Michigan Critical Materials Register List:	Not Listed
Massachusetts Extraordinarily Hazardous Substances:	Not Listed
California - Regulated Carcinogens:	Not Listed
Pennsylvania RTK - Special Hazardous Substances:	Not Listed
New Jersey - Special Hazardous Substances:	Flammable - fourth degree
New Jersey - Environmental Hazardous Substances List:	SN 1476 TPQ: 500 lb
Illinois - Toxic Air Contaminants:	Not Listed
New York - Reporting of Releases Part 597 - List of Hazardous Substances:	Not Listed
Propane	
Louisiana Right-To-Know:	Not Listed
California Proposition 65:	Not Listed
New Jersey Right-To-Know:	SN 1594
Pennsylvania Right-To-Know:	Present
Massachusetts Right-To Know:	Present
Florida Substance List:	Not Listed
Rhode Island Right-To-Know:	Toxic; Flammable
Michigan Critical Materials Register List:	Not Listed
Massachusetts Extraordinarily Hazardous Substances:	Not Listed
California - Regulated Carcinogens:	Not Listed
Pennsylvania RTK - Special Hazardous Substances:	Not Listed
New Jersey - Special Hazardous Substances:	Flammable - fourth degree
New Jersey - Environmental Hazardous Substances List:	SN 1594 TPQ: 500 lb
Illinois - Toxic Air Contaminants:	Not Listed
New York - Reporting of Releases Part 597 - List of Hazardous Substances:	Not Listed
Isobutylene	
Louisiana Right-To-Know:	Not Listed
California Proposition 65:	Not Listed
New Jersey Right-To-Know:	SN 1045
Pennsylvania Right-To-Know:	Present
Massachusetts Right-To Know:	Present
Florida Substance List:	Not Listed
Rhode Island Right-To-Know:	Flammable
Michigan Critical Materials Register List:	Not Listed
Massachusetts Extraordinarily Hazardous Substances:	Not Listed
California - Regulated Carcinogens:	Not Listed
Pennsylvania RTK - Special Hazardous	Not Listed

Substances:	
New Jersey - Special Hazardous Substances:	Flammable - fourth degree
New Jersey - Environmental Hazardous Substances List:	SN 1045 TPQ: 500 lb
Illinois - Toxic Air Contaminants:	Not Listed
New York - Reporting of Releases Part 597 - List of Hazardous Substances:	Not Listed
Propylene	
Louisiana Right-To-Know:	Not Listed
California Proposition 65:	Not Listed
New Jersey Right-To-Know:	SN 1609
Pennsylvania Right-To-Know:	Environmental hazard
Massachusetts Right-To Know:	Present
Florida Substance List:	Not Listed
Rhode Island Right-To-Know:	Toxic; Flammable
Michigan Critical Materials Register List:	Not Listed
Massachusetts Extraordinarily Hazardous Substances:	Not Listed
California - Regulated Carcinogens:	Not Listed
Pennsylvania RTK - Special Hazardous Substances:	Not Listed
New Jersey - Special Hazardous Substances:	Flammable - fourth degree
New Jersey - Environmental Hazardous Substances List:	SN 1609 TPQ: 500 lb
Illinois - Toxic Air Contaminants:	Not Listed
New York - Reporting of Releases Part 597 - List of Hazardous Substances:	Not Listed
2,2-dimethylpropane	
Louisiana Right-To-Know:	Not Listed
California Proposition 65:	Not Listed
New Jersey Right-To-Know:	SN 0766
Pennsylvania Right-To-Know:	Present
Massachusetts Right-To Know:	Present
Florida Substance List:	Not Listed
Rhode Island Right-To-Know:	Not Listed
Michigan Critical Materials Register List:	Not Listed
Massachusetts Extraordinarily Hazardous Substances:	Not Listed
California - Regulated Carcinogens:	Not Listed
Pennsylvania RTK - Special Hazardous Substances:	Not Listed
New Jersey - Special Hazardous Substances:	Flammable - fourth degree
New Jersey - Environmental Hazardous Substances List:	SN 0766 TPQ: 500 lb
Illinois - Toxic Air Contaminants:	Not Listed
New York - Reporting of Releases Part 597 - List of Hazardous Substances:	Not Listed
n-Hexane	
Louisiana Right-To-Know:	Not Listed
California Proposition 65:	Not Listed
New Jersey Right-To-Know:	SN 1340
Pennsylvania Right-To-Know:	Present
Massachusetts Right-To Know:	Present
Florida Substance List:	Not Listed
Rhode Island Right-To-Know:	Toxic; Flammable
Michigan Critical Materials Register List:	Not Listed
Massachusetts Extraordinarily Hazardous Substances:	Not Listed
California - Regulated Carcinogens:	Not Listed
Pennsylvania RTK - Special Hazardous Substances:	Not Listed
New Jersey - Special Hazardous Substances:	Flammable - third degree
New Jersey - Environmental Hazardous Substances List:	SN 1340 TPQ: 500 lb
Illinois - Toxic Air Contaminants:	Present

New York - Reporting of Releases Part 597 - List of Hazardous Substances:	1 lb RQ (air); 1 lb RQ (land/water)
1,3-Butadiene	
Louisiana Right-To-Know:	Not Listed
California Proposition 65:	Carcinogen, initial date 4/1/88 Developmental toxicity, initial date 4/16/04 Reproductive toxicity, initial date 4/16/04 SN 0272 Environmental hazard; Special hazardous substance
New Jersey Right-To-Know:	Carcinogen; Extraordinarily hazardous
Pennsylvania Right-To-Know:	Not Listed
Massachusetts Right-To Know:	Toxic; Flammable
Florida Substance List:	Not Listed
Rhode Island Right-To-Know:	Not Listed
Michigan Critical Materials Register List:	Carcinogen; extraordinarily hazardous
Massachusetts Extraordinarily Hazardous Substances:	Not Listed
California - Regulated Carcinogens:	Present
Pennsylvania RTK - Special Hazardous Substances:	
New Jersey - Special Hazardous Substances:	Carcinogen; mutagen; flammable - fourth degree; reactive - second degree SN 0272 TPQ: 500 lb
New Jersey - Environmental Hazardous Substances List:	
Illinois - Toxic Air Contaminants:	Present
New York - Reporting of Releases Part 597 - List of Hazardous Substances:	Not Listed
Benzene	
Louisiana Right-To-Know:	Not Listed
California Proposition 65:	Carcinogen, initial date 2/27/87 Developmental toxicity, initial date 12/26/97 Male reproductive toxicity, initial date 12/26/97 SN 0197 Environmental hazard; Special hazardous substance
New Jersey Right-To-Know:	Carcinogen; Extraordinarily hazardous
Pennsylvania Right-To-Know:	Not Listed
Massachusetts Right-To Know:	Toxic (skin); Flammable (skin); Carcinogen (skin)
Florida Substance List:	100 lb Annual usage threshold
Rhode Island Right-To-Know:	Carcinogen; Extraordinarily hazardous
Michigan Critical Materials Register List:	Not Listed
Massachusetts Extraordinarily Hazardous Substances:	Present
California - Regulated Carcinogens:	
Pennsylvania RTK - Special Hazardous Substances:	
New Jersey - Special Hazardous Substances:	Carcinogen; Flammable - third degree; Mutagen
New Jersey - Environmental Hazardous Substances List:	SN 0197 TPQ: 500 lb
Illinois - Toxic Air Contaminants:	Present
New York - Reporting of Releases Part 597 - List of Hazardous Substances:	10 lb RQ (air); 1 lb RQ (land/water)

**Canada DSL/NDL Inventory:** This product and/or its components are listed either on the Domestic Substances List (DSL) or are exempt.

**Canadian Regulatory Information:** This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the SDS contains all of the information required by those regulations.

Name	Canada - WHMIS: Classifications of Substances:	Canada - WHMIS: Ingredient Disclosure:
n-Butane	A,B1	1%
Isobutane	A,B1	1%
Isopentane	B2	1%
Butenes	A,B1	1%
n-Pentane	B2	1%
Propane	A,B1	1%

Isobutylene	A,B1	1%
Propylene	A,B1,D2B	1%
2,2-dimethylpropane	A,B1	1%
n-Hexane	B2,D2A,D2B	1%
1,3-Butadiene	A,B1,D2A,F	0.1%
Benzene	B2,D2A,D2B	0.1%



**Note:** Not applicable.

## 16. OTHER INFORMATION

**Prepared By** Toxicology and Product Safety

### Revision Notes

**Revision Date** 05/14/2015

### Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information is intended as guidance for safe handling, use, processing, storage, transportation, accidental release, clean-up and disposal and is not considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.