



# SAFETY DATA SHEET

SDS ID NO.: 0107MAR019

Revision date 12/28/2021

## 1. IDENTIFICATION

**Product Name** Marathon Petroleum Isobutane

**Synonym** Isobutane  
**Product code** 0107MAR019  
**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 (M-F; 8-5 EST)

**24 Hour Emergency Telephone** CHEMTREC: 1-800-424-9300 (CCN# 13740)

## 2. HAZARD IDENTIFICATION

### OSHA Regulatory Status

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

### Classification

Flammable gases	Category 1
Gases under pressure	Liquefied Gas
Simple asphyxiant	-
Reproductive toxicity	Category 2
Specific target organ toxicity (single exposure)	Category 3

### Hazards Not Otherwise Classified (HNOC)

Static accumulating flammable liquid  
Liquid product may cause freeze burn

### Label Elements

#### **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  
May cause drowsiness or dizziness  
Contact with liquid product may cause freeze burn.  
Suspected of damaging fertility or the unborn child  
Harmful to aquatic life with long lasting effects

**Appearance** Colorless Liquefied Gas**Physical State** Liquefied Gas**Odor** Slight Hydrocarbon**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  
 Avoid breathing gas/vapors  
 Wear protective gloves/protective clothing/eye protection/face protection  
 Use only outdoors or in a well-ventilated area  
 Avoid release to the environment

**Precautionary Statements - Response**

IF exposed or concerned: Get medical attention  
 Leaking gas fire: Do not extinguish, unless leak can be stopped safely  
 Eliminate all ignition sources if safe to do so  
 If inhaled: Remove person to fresh air and keep comfortable for breathing.  
 Call a poison center or doctor if you feel unwell

**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

Iso-Butane is a mixture of aliphatic petroleum hydrocarbons.

**Composition Information**

Name	CAS Number	% Concentration
Isobutane	75-28-5	25-100
n-Butane	106-97-8	0-65
Butenes	25167-67-3	0-16
Propane	74-98-6	0-10
Isopentane	78-78-4	0-9
Isobutylene	115-11-7	0-4
n-Pentane	109-66-0	0-2.5
2,2-dimethylpropane	463-82-1	0-2
Propylene	115-07-1	0-2
n-Hexane	110-54-3	0-0.8

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).

<b>Inhalation</b>	Remove to fresh air. If not breathing, utilize bag valve mask or other form of barrier device to 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.
<b>Skin contact</b>	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.
<b>Eye contact</b>	Liquid: Flush with large amounts of tepid water for at least 15 minutes. Gently remove contact lenses while flushing. Eyelids should be held away from the eyeball to ensure thorough rinsing. 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.
<b>Ingestion</b>	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**

<b>Adverse effects</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. Contact with liquid product may cause freeze burn.
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#### **Indication of any immediate medical attention and special treatment needed**

<b>Notes to physician</b>	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.
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## **5. FIRE-FIGHTING MEASURES**

<b>Suitable extinguishing media</b>	For small fires, Class B fire extinguishing media such as CO2 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.
<b>Unsuitable extinguishing media</b>	DO NOT EXTINGUISH A LEAKING GAS FIRE UNLESS LEAK CAN BE STOPPED.
<b>Specific hazards arising from the chemical</b>	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.
<b>Hazardous combustion products</b>	Smoke, carbon monoxide, and other products of incomplete combustion.
<b>Explosion data</b>	
<b>Sensitivity to mechanical impact:</b>	No.
<b>Sensitivity to static discharge:</b>	Yes.
<b>Special protective equipment and precautions for firefighters</b>	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

**Personal precautions**

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.

**Protective equipment**

Use personal protection measures as recommended in Section 8.

**Emergency procedures**

Advise authorities and National Response Center (800-424-8802) if the product has entered a water course or sewer. Notify local health and pollution control agencies, if appropriate.

**Environmental precautions**

If leaking, take appropriate steps to disperse gas.

**Methods and materials for containment**

Prevent further leakage or spillage if safe to do so.

**Methods and materials for cleaning up**

Shut off gas supply, if safe to do so. Allow equipment to depressurize. Isolate area until gas has dispersed.

## 7. HANDLING AND STORAGE

**Safe handling precautions**

Avoid breathing gas or mists. Use only with adequate ventilation. Gas and/or vapors 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.

**Storage conditions**

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

### Control parameters

Name	ACGIH TLV	OSHA PELs	NIOSH IDLH
Isobutane 75-28-5	1000 ppm STEL	-	-
n-Butane 106-97-8	1000 ppm STEL	-	1600 ppm
Butenes 25167-67-3	250 ppm TWA	-	-
Propane 74-98-6	Simple asphyxiant	TWA: 1000 ppm TWA: 1800 mg/m <sup>3</sup>	2100 ppm
Isopentane 78-78-4	1000 ppm TWA	-	-
Isobutylene 115-11-7	250 ppm TWA	-	-
n-Pentane 109-66-0	1000 ppm TWA	TWA: 1000 ppm TWA: 2950 mg/m <sup>3</sup>	1500 ppm
2,2-dimethylpropane 463-82-1	1000 ppm TWA	-	-
Propylene 115-07-1	500 ppm TWA	-	3400 ppm
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>	1100 ppm

**Notes:** No further information available.

### **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 when handling pressurized gases 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>Appearance</b>	Colorless Liquefied Gas
<b>Physical State</b>	Liquefied Gas
<b>Color</b>	Colorless

<b>Odor</b>	Slight Hydrocarbon
<b>Odor Threshold</b>	No data available.
<b>Property</b>	<b>Values (method)</b>
<b>pH</b>	Not applicable
<b>Melting Point / Freezing Point</b>	-159 °C / -255 °F
<b>Initial Boiling Point / Boiling Range</b>	-11 °C / 11 °F
<b>Flash Point</b>	-87 °C / -124 °F
<b>Evaporation Rate</b>	No data available.
<b>Flammability (solid, gas)</b>	Extremely flammable gas
<b>Flammability Limit in Air (%):</b>	
<b>Upper Flammability Limit:</b>	8.4
<b>Lower Flammability Limit:</b>	1.8
<b>Explosion Limits</b>	No data available.
<b>Vapor Pressure</b>	72.8 psi @ 100°F
<b>Vapor Density</b>	2.1 (Air = 1)
<b>Specific Gravity / Relative Density</b>	0.564
<b>Water Solubility</b>	No data available.
<b>Partition Coefficient</b>	No data available.
<b>Autoignition Temperature</b>	462 °C / 863 °F
<b>Decomposition Temperature</b>	No data available.
<b>Kinematic Viscosity</b>	No data available.
<b>VOC Content (%)</b>	No data available.
<b>Density</b>	35.20 lb/ft <sup>3</sup> @ 60°F
<b>Bulk Density</b>	Not applicable

## 10. STABILITY AND REACTIVITY

<b>Reactivity</b>	The product is non-reactive under normal conditions.
<b>Chemical stability</b>	The material is stable at 70°F (21°C ), 760 mmHg pressure.
<b>Possibility of hazardous reactions</b>	None under normal processing.
<b>Hazardous polymerization</b>	Does not polymerize except under special conditions (extreme temperatures, pressure, oxidizers).
<b>Conditions to avoid</b>	Sources of heat or ignition.
<b>Incompatible materials</b>	Strong oxidizing agents.
<b>Hazardous decomposition products</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
Isobutane 75-28-5	-	-	570,000 ppm (Rat) 15 min
n-Butane 106-97-8	-	-	658 mg/L (Rat) 4 h
Butenes 25167-67-3	-	-	658 mg/L (Rat) 4 h
Propane 74-98-6	-	-	> 1,464 mg/L (Rat) 15 min
Isopentane 78-78-4	-	-	450 mg/L (Mouse) 2 h
Isobutylene 115-11-7	620 mg/kg (Rat)	-	620 mg/L (Rat) 4h
n-Pentane 109-66-0	> 2000 mg/kg (Rat)	-	364 mg/L (Rat) 4 h
Propylene 115-07-1	-	-	658 mg/L (Rat) 4 h
n-Hexane 110-54-3	15000 mg/kg (Rat)	3000 mg/kg (Rabbit)	48000 ppm (Rat) 4 h

### **Immediate and delayed effects as well as chronic effects from short and long-term exposure**

PROPANE, BUTANE and PENTANE: Laboratory animal studies indicate exposure to extremely high levels (1 to 10 vol.% in air) may cause 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.

N-HEXANE: Short-term overexposure to n-hexane vapor may cause headache, nausea, vomiting, dizziness, lightheadedness, loss of consciousness, coma, and even death in humans. Respiratory effects of overexposure may include nose, throat, and lung irritation, coughing, wheezing, and shortness of breath. Direct and prolonged contact with liquid may cause dryness and redness of the skin. Long-term or repeated overexposure to n-hexane can cause peripheral nerve damage. Initial signs are numbness of the fingers and toes. Motor/muscle weakness can occur in the digits, but may also involve muscles of the arms, forearms, and thighs. Onset of these signs may be delayed for several months to a year after initial exposure. Repeated and sustained inhalation exposure to high vapor concentrations of n-hexane resulted in degenerative changes in the testes and reduced sperm count in male laboratory rats.

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

<b>Signs and symptoms</b>	Headache, drowsiness, dizziness, loss of coordination, disorientation and fatigue.
<b>Acute toxicity</b>	None known.
<b>Skin corrosion/irritation</b>	None known.
<b>Serious eye damage/eye irritation</b>	None known.
<b>Sensitization</b>	Not expected to be a skin or respiratory sensitizer.
<b>Mutagenic effects</b>	None known.
<b>Carcinogenicity</b>	The chemical substance or mixture has been evaluated with the data available and does not satisfy the classification criteria. Cancer designations are listed in the table below

Name	ACGIH (Class)	IARC (Class)	NTP	OSHA
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

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

**Specific Target Organ Toxicity (STOT) - single exposure** May cause drowsiness or dizziness.

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

**Aspiration hazard** Not applicable.

## 12. ECOLOGICAL INFORMATION

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

Name	Fish	Crustacea	Algae/aquatic plants
Butenes 25167-67-3	96-hr LC50 = 19 mg/L Fish	48-hr LC50 = 11 mg/l Daphnia	-
Isopentane 78-78-4	96-hr LC50 = 3.1 mg/L Rainbow trout	48-hr EC50 = >1 - <10 mg/L Daphnia magna	-
Isobutylene 115-11-7	96-hr LC50 = 22 mg/L Fish	-	-
n-Pentane 109-66-0	96-hr LC50 >1 - <10 mg/L Rainbow trout	48-hr EC50 = 9.7 mg/L Daphnia magna	-
n-Hexane 110-54-3	96-hr LC50 = 2.5 mg/l Fathead minnow	-	-

**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.

**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

**UN/Identification No:** UN 1969  
**UN Proper Shipping Name:** Isobutane  
**Transport Hazard Class(es):** 2.1  
**Packing Group:** Not applicable

### TDG

**UN/Identification No:** UN 1969  
**UN Proper Shipping Name:** Isobutane  
**Transport Hazard Class(es):** 2.1



Packing Group: Not applicable

**IATA**

UN/Identification No: UN 1969  
 UN Proper Shipping Name: Isobutane  
 Transport Hazard Class(es): 2.1  
 Packing Group: Not applicable

**IMDG**

UN/Identification No: UN 1969  
 UN Proper Shipping Name: Isobutane  
 Transport Hazard Class(es): 2.1  
 Packing Group: Not applicable  
 EmS No: F-D, S-U  
 Marine Pollutant: No

## 15. REGULATORY INFORMATION

**Regulatory Information**

**US TSCA Chemical Inventory** This product and/or its components are listed on the TSCA Chemical Inventory or are exempt.

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

**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 above the de minimis threshold.

**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-Hexane 110-54-3	5000 lb 2270 kg

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

Flammable Gas  
 Hazard Not Otherwise Classified (HNOC)-Physical  
 Simple asphyxiant  
 Reproductive toxicity  
 Specific target organ toxicity  
 Hazard Not Otherwise Classified (HNOC)-Health

**SARA Section 313** This product may contain component(s), which if in exceedance of the de minimus 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
Propylene 115-07-1	1.0 % de minimis concentration
n-Hexane 110-54-3	1.0 % de minimis concentration

**U.S. State Regulations**

**California Proposition 65**

This product can expose you to chemicals which are known to the State of California to cause cancer, birth defects or other reproductive harm.

Name	California Proposition 65
n-Hexane 110-54-3	Male reproductive toxicity, initial date 12/15/17

For more information, go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov).

**State Right-To-Know Regulations** The following component(s) of this material are identified on the regulatory lists below:

Name	New Jersey Right-To-Know	Pennsylvania Right-To-Know	Massachusetts Right-To-Know
Isobutane 75-28-5	Listed	Listed	Listed
n-Butane 106-97-8	Listed	Listed	Listed
Butenes 25167-67-3	Listed	Listed	Not Listed
Propane 74-98-6	Listed	Listed	Listed
Isopentane 78-78-4	Listed	Listed	Listed
Isobutylene 115-11-7	Listed	Listed	Listed
n-Pentane 109-66-0	Listed	Listed	Listed
2,2-dimethylpropane 463-82-1	Listed	Listed	Listed
Propylene 115-07-1	Listed	Listed	Listed
n-Hexane 110-54-3	Listed	Listed	Listed

## 16. OTHER INFORMATION

**Prepared by**

Toxicology &amp; Product Safety

**NFPA****Revision Notes****Revision date**

12/28/2021

**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.