



SAFETY DATA SHEET

This safety data sheet was created pursuant to the requirements of: US - OSHA Hazard Communication Standard (29 CFR 1910.1200)

Issuing Date 06-Sep-2019

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Revision Number 1

1. Identification

Product identifier

Product Name Propane

Other means of identification

UN/ID no UN1075

Recommended use of the chemical and restrictions on use

Recommended use By-product from polypropylene production; co-mingling

Restrictions on use No information available.

Details of the supplier of the safety data sheet

Supplier Address

Braskem America, Inc.
1735 Market Street
Philadelphia, PA 19103-7583
TEL: (800) 396 - 5251

Emergency telephone number

Emergency Telephone CHEMTREC: +1-703-527-3887 (INTERNATIONAL)
1-800-424-9300 (NORTH AMERICA)

2. Hazard(s) identification

Classification

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 asphyxiants	Yes

Hazards not otherwise classified (HNOC)

Not applicable

Label elements

Danger

Hazard statements

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

**Precautionary Statements - Prevention**

Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking

Precautionary Statements - Response

Eliminate all ignition sources if safe to do so

Leaking gas fire: Do not extinguish, unless leak can be stopped safely

Precautionary Statements - Storage

Protect from sunlight. Store in a well-ventilated place

Other information

Contact with liquid may cause cold burns or frostbite

3. Composition/information on ingredients

Substance

Not applicable.

Mixture

Chemical name	CAS No.	Weight-%	Trade secret
Hydrocarbons, C3	68606-26-8	90-100	*
Butane	106-97-8	0.1-2.5	*

*The exact percentage (concentration) of composition has been withheld as a trade secret.

4. First-aid measures

Description of first aid measures**Inhalation**

IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing. If breathing is difficult, (trained personnel should) give oxygen. If breathing has stopped, give artificial respiration. Get medical attention immediately.

Eye contact

In case of eye contact, immediately flush eyes with plenty of water for at least 15 minutes. If frostbite is suspected, flush eyes with cool water for 15 minutes and obtain immediate medical attention.

Skin contact

In case of contact with liquefied gas, thaw frosted parts with lukewarm water. Call a physician.

Ingestion

Clean mouth with water and drink afterwards plenty of water. Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Get medical attention.

Most important symptoms and effects, both acute and delayed

Symptoms May cause asphyxiation in high concentrations. Inhalation of high vapor concentrations may cause symptoms like headache, dizziness, tiredness, nausea and vomiting.

Indication of any immediate medical attention and special treatment needed

Note to physicians Treat symptomatically.

5. Fire-fighting measures

Suitable Extinguishing Media CO₂, dry chemical, dry sand, alcohol-resistant foam. Do not extinguish a leaking gas fire unless leak can be stopped.

Unsuitable extinguishing media Do not use a solid water stream as it may scatter and spread fire.

Specific hazards arising from the chemical Risk of ignition: Keep product and empty container away from heat and sources of ignition. Cylinders may rupture under extreme heat. Ruptured cylinders may rocket. In the event of fire, cool tanks with water spray. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations. Damaged cylinders should be handled only by specialists.

Explosion data

Sensitivity to mechanical impact Yes.

Sensitivity to static discharge Yes.

Special protective equipment for fire-fighters Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear. Use personal protection equipment.

6. Accidental release measures**Personal precautions, protective equipment and emergency procedures**

Personal precautions Contents under pressure. Evacuate personnel to safe areas. ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area). Keep people away from and upwind of spill/leak. Avoid breathing vapors or mists. Avoid contact with skin, eyes or clothing. All equipment used when handling the product must be grounded. Use personal protective equipment as required. See section 8 for more information. Empty containers pose a potential fire and explosion hazard. Do not cut, puncture or weld containers.

Other information Do not extinguish a leaking gas fire unless leak can be stopped.

Methods and material for containment and cleaning up

Methods for containment Prevent further leakage or spillage if safe to do so. Keep out of drains, sewers, ditches and waterways.

Methods for cleaning up Spill should be handled by trained cleaning personnel properly equipped with respiratory and eye protection. Do not touch or walk through spilled material.

7. Handling and storage**Precautions for safe handling**

Advice on safe handling Contents under pressure. Use personal protection equipment. Avoid breathing vapors or

mists. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Use grounding and bonding connection when transferring this material to prevent static discharge, fire or explosion. Use with local exhaust ventilation. Use spark-proof tools and explosion-proof equipment. Keep in an area equipped with sprinklers. Use according to package label instructions. Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes or clothing. Do not eat, drink or smoke when using this product. Remove contaminated clothing and shoes. Take off contaminated clothing and wash before reuse. In case of insufficient ventilation, wear suitable respiratory equipment. Empty containers pose a potential fire and explosion hazard. Do not cut, puncture or weld containers.

Conditions for safe storage, including any incompatibilities

Storage Conditions

Keep containers tightly closed in a dry, cool and well-ventilated place. Keep away from heat, sparks, flame and other sources of ignition (i.e., pilot lights, electric motors and static electricity). Protect from sunlight. Keep in properly labeled containers. Do not store near combustible materials. Keep in an area equipped with sprinklers. Store in accordance with local regulations. Store in accordance with the particular national regulations.

8. Exposure controls/personal protection

Control parameters

Exposure Limits

The following ingredients are the only ingredients of the product above the cut-off level (or level that contributes to the hazard classification of the mixture) which have an exposure limit applicable in the region for which this safety data sheet is intended or other recommended limit. At this time, the other relevant constituents have no known exposure limits from the sources listed here.

Chemical name	ACGIH TLV	OSHA PEL	NIOSH IDLH
Butane 106-97-8	STEL: 1000 ppm explosion hazard	(vacated) TWA: 800 ppm (vacated) TWA: 1900 mg/m ³	IDLH: 1600 ppm TWA: 800 ppm TWA: 1900 mg/m ³

Appropriate engineering controls

Engineering controls

Showers
Eyewash stations
Ventilation systems.

Individual protection measures, such as personal protective equipment

Eye/face protection

Safety glasses with side shields. In case of rupture: Tight sealing safety goggles, face shield.

Hand protection

Impervious gloves.

Skin and body protection

Wear fire/flame resistant/retardant clothing. Chemical resistant safety shoes. Chemical resistant apron.

Respiratory protection

If exposure limits are exceeded or irritation is experienced, NIOSH/MSHA approved respiratory protection should be worn. Positive-pressure supplied air respirators may be required for high airborne contaminant concentrations. Respiratory protection must be provided in accordance with current local regulations. Consult with an industrial hygienist to determine the appropriate respiratory protection for your specific use of this material. A respiratory protection program compliant with all applicable regulations must be followed whenever workplace conditions require the use of a respirator.

General hygiene considerations Handle in accordance with good industrial hygiene and safety practice. Do not get in eyes, on skin, or on clothing.

9. Physical and chemical properties

Information on basic physical and chemical properties

Appearance

Physical state	Compressed liquefied gas
Color	colorless
Odor	Natural gas
Odor threshold	No data available

Property	Values	Remarks • Method
pH	No data available	None known
Melting point / freezing point	-189.7 °C / -309.46 °F	None known
Boiling point / boiling range	-42.22 °C / -44 °F	None known
Flash point	-104 °C / -155 °F	
Evaporation rate	No data available	None known
Flammability (solid, gas)	No data available	None known
Flammability Limit in Air		None known
Upper flammability or explosive limits	No data available	
Lower flammability or explosive limits	No data available	
Vapor pressure	No data available	None known
Vapor density	No data available	None known
Relative density	0.58	None known
Water solubility	Negligible	None known
Solubility(ies)	No data available	None known
Partition coefficient	No data available	None known
Autoignition temperature	No data available	None known
Decomposition temperature	No data available	None known
Kinematic viscosity	No data available	None known
Dynamic viscosity	No data available	None known

Other information

Explosive properties	No information available.
Oxidizing properties	No information available.
Softening point	No information available
Molecular weight	No information available
VOC Content (%)	2.5%
Liquid Density	No information available
Bulk density	No information available

10. Stability and reactivity

Reactivity	None under normal use conditions.
Chemical stability	Stable under normal conditions.
Possibility of hazardous reactions	May form explosive mixtures with air.
Hazardous polymerization	Hazardous polymerization does not occur.
Conditions to avoid	Heat, flames and sparks. Extremes of temperature and direct sunlight.
Incompatible materials	OXIDIZERS.
Hazardous decomposition products	Carbon monoxide. Carbon dioxide (CO ₂).

11. Toxicological information

Information on likely routes of exposure

Inhalation	Simple asphyxiant. Causes headache, drowsiness or other effects to the central nervous system. In high concentration the gas may cause a suffocation. Victim may not be aware of asphyxiation.
Eye contact	Contact with liquid may cause cold burns or frostbite.
Skin contact	Contact with liquid may cause cold burns or frostbite.
Ingestion	Not an expected route of exposure.

Symptoms related to the physical, chemical and toxicological characteristics

Symptoms	May cause asphyxiation in high concentrations. Symptoms of overexposure are dizziness, headache, tiredness, nausea, unconsciousness, cessation of breathing.
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Acute toxicity

Numerical measures of toxicity

Based on available data, the classification criteria are not met

Component Information

Chemical name	Oral LD50	Dermal LD50	Inhalation LC50
Hydrocarbons, C3 68606-26-8	-	-	= 658 mg/L (Rat) 4 h
Butane 106-97-8	-	-	= 658 g/m ³ (Rat) 4 h

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

Skin corrosion/irritation	Based on available data, the classification criteria are not met.
Serious eye damage/eye irritation	Based on available data, the classification criteria are not met.
Respiratory or skin sensitization	Based on available data, the classification criteria are not met.
Germ cell mutagenicity	Based on available data, the classification criteria are not met.
Carcinogenicity	Contains no ingredients above reportable quantities listed as a carcinogen.
Reproductive toxicity	This product does not contain any known or suspected reproductive hazards.
STOT - single exposure	None of the ingredients are known to cause specific target organ effects from a single exposure.
STOT - repeated exposure	None of the ingredients are known to cause specific target organ effects through prolonged or repeated exposure.
Target organ effects	Central nervous system.
Aspiration hazard	No information available.
Other adverse effects	No information available.

Interactive effects No information available.

12. Ecological information

Ecotoxicity The environmental impact of this product has not been fully investigated.

Persistence and degradability No information available.

Bioaccumulation There is no data for this product.

Component Information

Chemical name	Partition coefficient
Hydrocarbons, C3 68606-26-8	<=2.8
Butane 106-97-8	2.89

Other adverse effects No information available.

13. Disposal considerations

Waste treatment methods

Waste from residues/unused products Dispose of in accordance with local regulations. Dispose of waste in accordance with environmental legislation. Should not be released into the environment. Recover or recycle if possible.

Contaminated packaging Empty containers pose a potential fire and explosion hazard. Do not cut, puncture or weld containers. Do not dispose of with household waste. Do not flush to sewer. Do not allow to enter into surface water or drains.

California Hazardous Waste Status This product contains one or more substances that are listed with the State of California as a hazardous waste.

14. Transport information

DOT

UN/ID no	UN1075
Proper shipping name	PETROLEUM GASES, LIQUEFIED
Hazard class	2.1
Special Provisions	T50
DOT Marine Pollutant	NP
Description	UN1075, PETROLEUM GASES, LIQUEFIED, 2.1
Emergency Response Guide Number	115

TDG

UN/ID no	UN1075
Proper shipping name	LIQUEFIED PETROLEUM GASES
Hazard class	2.1
Description	UN1075, LIQUEFIED PETROLEUM GASES, 2.1

MEX

UN/ID no	UN1075
Proper shipping name	PETROLEUM GASES, LIQUEFIED
Hazard class	2.1
Description	UN1075, PETROLEUM GASES, LIQUEFIED, 2.1

IATA

UN number	UN1075
UN proper shipping name	Petroleum gases, liquefied
Transport hazard class(es)	2.1
ERG Code	10L
Special Provisions	A1
Description	UN1075, Petroleum gases, liquefied, 2.1

IMDG

UN number	UN1075
UN proper shipping name	PETROLEUM GASES, LIQUEFIED
Transport hazard class(es)	2
EmS-No	F-D, S-U
Marine pollutant	NP
Description	UN1075, PETROLEUM GASES, LIQUEFIED, 2

15. Regulatory information**International Inventories**

TSCA Contact supplier for inventory compliance status.

Legend:

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory

US Federal Regulations**SARA 313**

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372.

SARA 311/312 Hazard Categories

Should this product meet EPCRA 311/312 Tier reporting criteria at 40 CFR 370, refer to Section 2 of this SDS for appropriate classifications. Under the amended regulations at 40 CFR 370, EPCRA 311/312 Tier II reporting for the 2017 calendar year will need to be consistent with updated hazard classifications.

CWA (Clean Water Act)

This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42).

CERCLA

This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material.

US State Regulations**California Proposition 65**

None known.

U.S. State Right-to-Know Regulations

US State Regulations

"X" designates substances disclosed in Section 3 that are listed in State Right-to know regulations

Chemical name	New Jersey	Massachusetts	Pennsylvania
Butane 106-97-8	X	X	X

U.S. EPA Label Information

EPA Pesticide Registration Number Not applicable

16. Other information

NFPA	Health hazards 2	Flammability 4	Instability 0	Physical and chemical properties SA
HMIS	Health hazards 2*	Flammability 4	Physical hazards 0	Personal protection X
<i>Chronic Hazard Star Legend</i>		<i>* = Chronic Health Hazard</i>		

Key or legend to abbreviations and acronyms used in the safety data sheet**Legend Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION**

TWA	TWA (time-weighted average)	STEL	STEL (Short Term Exposure Limit)
Ceiling	Maximum limit value	*	Skin designation

Key literature references and sources for data used to compile the SDS

Agency for Toxic Substances and Disease Registry (ATSDR)
 U.S. Environmental Protection Agency ChemView Database
 European Food Safety Authority (EFSA)
 EPA (Environmental Protection Agency)
 Acute Exposure Guideline Level(s) (AELG(s))
 U.S. Environmental Protection Agency Federal Insecticide, Fungicide, and Rodenticide Act
 U.S. Environmental Protection Agency High Production Volume Chemicals
 Food Research Journal
 Hazardous Substance Database
 International Uniform Chemical Information Database (IUCLID)
 Japan GHS Classification
 Australia National Industrial Chemicals Notification and Assessment Scheme (NICNAS)
 NIOSH (National Institute for Occupational Safety and Health)
 National Library of Medicine's ChemID Plus (NLM CIP)
 National Library of Medicine's PubMed database (NLM PUBMED)
 National Toxicology Program (NTP)
 New Zealand's Chemical Classification and Information Database (CCID)
 Organization for Economic Co-operation and Development Environment, Health, and Safety Publications
 Organization for Economic Co-operation and Development High Production Volume Chemicals Program
 Organization for Economic Co-operation and Development Screening Information Data Set
 RTECS (Registry of Toxic Effects of Chemical Substances)
 World Health Organization

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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 given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be 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.

End of Safety Data Sheet