Butane, Normal

Safety Data Sheet

According To Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules And Regulations And According To The Hazardous Products Regulation (February 11, 2015).

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SECTION 1: IDENTIFICATION

1.1. Product Identifier

Product Form: Mixture

Product Name: Butane, Normal

Synonyms: Butane, n-Butane, Butyl Hydride

1.2. Intended Use of the Product

Fuel

1.3. Name, Address, and Telephone of the Responsible Party

Company

Williams Inc.

One Williams Center

Tulsa, OK 74172

855-945-5762

www.williams.com

ehs@williams.com

1.4. Emergency Telephone Number

CHEMTREC:

1-800-424-9300 (US/Canada)

+01 703-527-3887 (International)

SECTION 2: HAZARDS IDENTIFICATION

2.1. Classification of the Substance or Mixture

GHS-US/CA Classification

Flammable gases Category 1	H220
Gases under pressure Liquefied gas	H280
Simple Asphyxiant	
Hazardous to the aquatic environment - Acute Hazard Category 3	H402
Hazardous to the aquatic environment - Chronic Hazard Category 3	H412

2.2. Label Elements

GHS-US/CA Labeling

Hazard Pictograms (GHS-US/CA) :

GHS02

GHS04

Signal Word (GHS-US/CA) : Danger

Hazard Statements (GHS-US/CA) : H220 - Extremely flammable gas.
H280 - Contains gas under pressure; may explode if heated.
H402 - Harmful to aquatic life.
H412 - Harmful to aquatic life with long lasting effects.
May displace oxygen and cause rapid suffocation.

Precautionary Statements (GHS-US/CA) : P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P273 - Avoid release to the environment.
P377 - Leaking gas fire: Do not extinguish, unless leak can be stopped safely.
P381 - In case of leakage, eliminate all ignition sources.
P403 - Store in a well-ventilated place.
P410+P403 - Protect from sunlight. Store in a well-ventilated place.
P501 - Dispose of contents/container in accordance with local, regional, national, territorial, provincial, and international regulations.

2.3. Other Hazards

Exposure may aggravate pre-existing eye, skin, or respiratory conditions. Contact with gas escaping the container can cause frostbite.

2.4. Unknown Acute Toxicity (GHS-US/CA)

No additional information available

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1. Substance

Not applicable

3.2. Mixture

Name	Synonyms	Product Identifier	% *	GHS Ingredient Classification
n-Butane	Butane	(CAS-No.) 106-97-8	> 95	Flam. Gas 1, H220 Press. Gas (Liq.), H280 Simple Asphyxiant
Isobutane	2-Methylpropane / Propane, 2-methyl- / R600a	(CAS-No.) 75-28-5	< 5	Flam. Gas 1, H220 Press. Gas (Liq.), H280 Simple Asphyxiant
Isopentane	Butane, 2-methyl- / 2-Methylbutane / Methylbutane	(CAS-No.) 78-78-4	< 1.5	Flam. Liq. 1, H224 STOT SE 3, H336 Asp. Tox. 1, H304 Aquatic Acute 2, H401 Aquatic Chronic 2, H411
n-Pentane	Pentane / Normal pentane / Pentane, n-	(CAS-No.) 109-66-0	< 1.5	Flam. Liq. 1, H224 STOT SE 3, H336 Asp. Tox. 1, H304 Aquatic Acute 2, H401 Aquatic Chronic 2, H411
Propane	Normal propane / n-Propane / R290	(CAS-No.) 74-98-6	< 1	Flam. Gas 1, H220 Press. Gas (Liq.), H280 Simple Asphyxiant

Full text of H-statements: see section 16

*Percentages are listed in weight by weight percentage (w/w%) for liquid and solid ingredients. Gas ingredients are listed in volume by volume percentage (v/v%).

SECTION 4: FIRST AID MEASURES

4.1. Description of First-aid Measures

General: Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label where possible).

Inhalation: First, take proper precautions to ensure your own safety before attempting rescue (e.g. wear appropriate respiratory protective equipment, use the buddy system), then remove the exposed person to fresh air. Keep at rest in a position comfortable for breathing. Give oxygen or artificial respiration if necessary. Obtain medical attention if breathing difficulty persists.

Skin Contact: Remove contaminated clothing. Drench affected area with water for at least 5 minutes. Obtain medical attention if irritation develops or persists. For brief contact with a small amount: Rewarm with body heat. Get immediate medical advice/attention. For extensive contact or a large amount: Immediately call a poison center/doctor and follow their advice. Specific treatment is urgent, incorrect first-aid practices will aggravate the injury. Protect affected area with a loose cover until proper medical treatment is received.

Eye Contact: Rinse cautiously with water for at least 5 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Obtain medical attention if irritation develops or persists. If frostbite or freezing occurs, immediately flush with plenty of lukewarm water to GENTLY warm the affected area. Do not use hot water. Do not rub affected area. Get immediate medical attention.

Ingestion: Ingestion is not an anticipated route of exposure. If accidental ingestion occurs, flush mouth out with water and get medical attention. Though risk of ingestion is extremely unlikely, in case of frostbite or freeze burns due to oral exposure seek immediate medical attention.

4.2. Most Important Symptoms and Effects Both Acute and Delayed

General: May cause frostbite on contact with the liquid. Asphyxia by lack of oxygen: risk of death.

Inhalation: In elevated concentrations may cause asphyxiation, central nervous system effects, and increased breathing rate. Symptoms of asphyxiation include headache, dizziness, rapid breathing, increased pulse, mood changes, tremors, cyanosis, muscular weakness, narcosis, numbness of the extremities, unconsciousness and death.

Skin Contact: Contact with gas/liquid escaping the container can cause frostbite and freeze burns.

Eye Contact: Contact with gas/liquid escaping the container can cause frostbite, freeze burns, and permanent eye damage.

Ingestion: Not considered a potential route of exposure, but contact with gas/liquid escaping the container can cause freeze burns and frostbite.

Chronic Symptoms: None known.

4.3. Indication of Any Immediate Medical Attention and Special Treatment Needed

If exposed or concerned, get medical advice and attention. If medical advice is needed, have product container or label at hand.

SECTION 5: FIRE-FIGHTING MEASURES

5.1. Extinguishing Media

Suitable Extinguishing Media: Do not extinguish burning gas if flow cannot be shut off immediately. Extinguish secondary FIRES with appropriate materials.

Unsuitable Extinguishing Media: Do not use a heavy water stream. Use of heavy stream of water may spread fire.

5.2. Special Hazards Arising From the Substance or Mixture

Fire Hazard: Extremely flammable gas.

Explosion Hazard: May form flammable/explosive vapor-air mixture. Container may explode in heat of fire. Vapors are heavier than air and may travel considerable distance to an ignition source and flash back to source of vapors.

Reactivity: Hazardous reactions will not occur under normal conditions.

5.3. Advice for Firefighters

Precautionary Measures Fire: Exercise caution when fighting any chemical fire.

Firefighting Instructions: Use water spray or fog for cooling exposed containers. Leaking gas fire: Do not extinguish, unless leak can be stopped safely. Eliminate all ignition sources if safe to do so. Fight fire remotely due to the risk of explosion.

Protection During Firefighting: Do not enter fire area without proper protective equipment, including respiratory protection.

Hazardous Combustion Products: Carbon oxides (CO, CO_2).

Other Information: Use water spray to disperse vapors. Do not allow run-off from fire fighting to enter drains or water courses.

5.4. Reference to Other Sections

Refer to Section 9 for flammability properties.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal Precautions, Protective Equipment and Emergency Procedures

General Measures: Eliminate every possible source of ignition. Do not get in eyes, on skin, or on clothing. Do not breathe Gas.

6.1.1. For Non-Emergency Personnel

Protective Equipment: Use appropriate personal protective equipment (PPE).

Emergency Procedures: Evacuate unnecessary personnel.

6.1.2. For Emergency Personnel

Protective Equipment: Equip cleanup crew with proper protection.

Emergency Procedures: Eliminate ignition sources. Evacuate unnecessary personnel, isolate, and ventilate area. Upon arrival at the scene, a first responder is expected to recognize the presence of dangerous goods, protect oneself and the public, secure the area, and call for the assistance of trained personnel as soon as conditions permit.

6.2. Environmental Precautions

Prevent entry to sewers and public waters. Avoid release to the environment.

6.3. Methods and Materials for Containment and Cleaning Up

For Containment: Remove ignition sources. Stop leak, if possible without risk. As an immediate precautionary measure, isolate spill or leak area in all directions.

Methods for Cleaning Up: Clean up spills immediately and dispose of waste safely. Stop the source of the release, if safe to do so. Consider the use of water spray to disperse vapors. Isolate the area until gas has dispersed. Ventilate and gas test area before entering. Transfer spilled material to a suitable container for disposal. Contact competent authorities after a spill.

6.4. Reference to Other Sections

See Section 8 for exposure controls and personal protection and Section 13 for disposal considerations.

SECTION 7: HANDLING AND STORAGE

7.1. Precautions for Safe Handling

Additional Hazards When Processed: Handle empty containers with care because residual vapors are flammable. Ruptured cylinders may rocket. Do not pressurize, cut, or weld containers. Asphyxiating gas at high concentrations.

Precautions for Safe Handling: Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Avoid prolonged contact with eyes, skin and clothing. Do not breathe gas.

Hygiene Measures: Handle in accordance with good industrial hygiene and safety procedures.

7.2. Conditions for Safe Storage, Including Any Incompatibilities

Technical Measures: Comply with applicable regulations. Proper grounding procedures to avoid static electricity should be followed.

Storage Conditions: Keep container closed when not in use. Store in a dry, cool place. Keep/Store away from direct sunlight, extremely high or low temperatures and incompatible materials. Keep in fireproof place. Cylinders should be stored upright with valve protection cap in place and firmly secured to prevent falling.

Incompatible Materials: Chlorine. Oxygen. Strong acids, strong bases, strong oxidizers.

7.3. Specific End Use(s)

Fuel

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Control Parameters

For substances listed in section 3 that are not listed here, there are no established exposure limits from the manufacturer, supplier, importer, or the appropriate advisory agency including: ACGIH (TLV), AIHA (WEEL), NIOSH (REL), OSHA (PEL), or Canadian provincial governments.

n-Butane (106-97-8)		
USA ACGIH	ACGIH OEL STEL	1000 ppm (explosion hazard (Butane, isomers)
USA NIOSH	NIOSH REL TWA	1900 mg/m³
USA NIOSH	NIOSH REL TWA	800 ppm
USA IDLH	IDLH	1600 ppm (>10% LEL)
Alberta	OEL TWA	1000 ppm
British Columbia	OEL STEL	1000 ppm (Butane, all isomers)
Manitoba	OEL STEL	1000 ppm (explosion hazard (Butane, isomers)
New Brunswick	OEL TWA	1900 mg/m³
New Brunswick	OEL TWA	800 ppm
Newfoundland & Labrador	OEL STEL	1000 ppm (explosion hazard (Butane, isomers)
Nova Scotia	OEL STEL	1000 ppm (explosion hazard (Butane, isomers)
Nunavut	OEL STEL	1250 ppm (Butane, all isomers)
Nunavut	OEL TWA	1000 ppm (Butane, all isomers)
Northwest Territories	OEL STEL	1250 ppm (Butane, all isomers)
Northwest Territories	OEL TWA	1000 ppm (Butane, all isomers)
Ontario	OEL STEL	1000 ppm (explosion hazard (Butane, all isomers)
Prince Edward Island	OEL STEL	1000 ppm (explosion hazard (Butane, isomers)
Québec	VEMP OEL TWA	1900 mg/m³
Québec	VEMP OEL TWA	800 ppm
Saskatchewan	OEL STEL	1250 ppm (Butane, all isomers)
Saskatchewan	OEL TWA	1000 ppm (Butane, all isomers)
Yukon	OEL STEL	1600 mg/m³
Yukon	OEL STEL	750 ppm
Yukon	OEL TWA	1400 mg/m³
Yukon	OEL TWA	600 ppm

Isobutane (75-28-5)		
USA ACGIH	ACGIH OEL STEL	1000 ppm (explosion hazard (Butane, isomers)
USA NIOSH	NIOSH REL TWA	1900 mg/m³
USA NIOSH	NIOSH REL TWA	800 ppm
British Columbia	OEL STEL	1000 ppm (Butane, all isomers)

Manitoba	OEL STEL	1000 ppm (explosion hazard (Butane, isomers)
Newfoundland & Labrador	OEL STEL	1000 ppm (explosion hazard (Butane, isomers)
Nova Scotia	OEL STEL	1000 ppm (explosion hazard (Butane, isomers)
Nunavut	OEL STEL	1250 ppm (Butane, all isomers)
Nunavut	OEL TWA	1000 ppm (Butane, all isomers)
Northwest Territories	OEL STEL	1250 ppm (Butane, all isomers)
Northwest Territories	OEL TWA	1000 ppm (Butane, all isomers)
Ontario	OEL STEL	1000 ppm (explosion hazard (Butane, all isomers)
Prince Edward Island	OEL STEL	1000 ppm (explosion hazard (Butane, isomers)
Saskatchewan	OEL STEL	1250 ppm (Butane, all isomers)
Saskatchewan	OEL TWA	1000 ppm (Butane, all isomers)

Propane (74-98-6)		
USA ACGIH	ACGIH chemical category	Simple asphyxiant See Appendix F: Minimal Oxygen Content
USA OSHA	OSHA PEL TWA	1800 mg/m³
USA OSHA	OSHA PEL TWA	1000 ppm
USA NIOSH	NIOSH REL TWA	1800 mg/m³
USA NIOSH	NIOSH REL TWA	1000 ppm
USA IDLH	IDLH	2100 ppm (10% LEL)
Alberta	OEL TWA	1000 ppm
Nunavut	OEL STEL	1250 ppm
Nunavut	OEL TWA	1000 ppm
Northwest Territories	OEL STEL	1250 ppm
Northwest Territories	OEL TWA	1000 ppm
Québec	VEMP OEL TWA	1800 mg/m³
Québec	VEMP OEL TWA	1000 ppm
Saskatchewan	OEL STEL	1250 ppm
Saskatchewan	OEL TWA	1000 ppm

Isopentane (78-78-4)		
USA ACGIH	ACGIH OEL TWA	1000 ppm (Pentane, all isomers)
Alberta	OEL TWA	1770 mg/m³ (Pentane, all isomers)
Alberta	OEL TWA	600 ppm (Pentane, all isomers)
British Columbia	OEL TWA	1000 ppm (Pentane, all isomers)
Manitoba	OEL TWA	1000 ppm (Pentane, all isomers)
Newfoundland & Labrador	OEL TWA	1000 ppm (Pentane, all isomers)
Nova Scotia	OEL TWA	1000 ppm (Pentane, all isomers)
Nunavut	OEL STEL	750 ppm (Pentane, all isomers)
Nunavut	OEL TWA	600 ppm (Pentane, all isomers)
Northwest Territories	OEL STEL	750 ppm (Pentane, all isomers)
Northwest Territories	OEL TWA	600 ppm (Pentane, all isomers)
Ontario	OEL TWA	1000 ppm (Pentane, all isomers)
Prince Edward Island	OEL TWA	1000 ppm (Pentane, all isomers)
Québec	VEMP OEL TWA	1000 ppm (Pentane (all isomers))
Saskatchewan	OEL STEL	750 ppm (Pentane, all isomers)
Saskatchewan	OEL TWA	600 ppm (Pentane, all isomers)

n-Pentane (109-66-0)		
USA ACGIH	ACGIH OEL TWA	1000 ppm (Pentane, all isomers)
USA OSHA	OSHA PEL TWA	2950 mg/m³
USA OSHA	OSHA PEL TWA	1000 ppm
USA NIOSH	NIOSH REL TWA	350 mg/m³
USA NIOSH	NIOSH REL TWA	120 ppm

USA NIOSH	NIOSH REL (Ceiling)	1800 mg/m³
USA NIOSH	NIOSH REL C	610 ppm
USA IDLH	IDLH	1500 ppm (10% LEL)
Alberta	OEL TWA	1770 mg/m³
Alberta	OEL TWA	600 ppm
British Columbia	OEL TWA	1000 ppm (Pentane, all isomers)
Manitoba	OEL TWA	1000 ppm (Pentane, all isomers)
New Brunswick	OEL STEL	2210 mg/m³
New Brunswick	OEL STEL	750 ppm
New Brunswick	OEL TWA	1770 mg/m³
New Brunswick	OEL TWA	600 ppm
Newfoundland & Labrador	OEL TWA	1000 ppm (Pentane, all isomers)
Nova Scotia	OEL TWA	1000 ppm (Pentane, all isomers)
Nunavut	OEL STEL	750 ppm (Pentane, all isomers)
Nunavut	OEL TWA	600 ppm (Pentane, all isomers)
Northwest Territories	OEL STEL	750 ppm (Pentane, all isomers)
Northwest Territories	OEL TWA	600 ppm (Pentane, all isomers)
Ontario	OEL TWA	1000 ppm
Prince Edward Island	OEL TWA	1000 ppm (Pentane, all isomers)
Québec	VEMP OEL TWA	1000 ppm (Pentane (all isomers))
Saskatchewan	OEL STEL	750 ppm
Saskatchewan	OEL TWA	600 ppm
Yukon	OEL STEL	2250 mg/m³
Yukon	OEL STEL	750 ppm
Yukon	OEL TWA	1800 mg/m³
Yukon	OEL TWA	600 ppm

Aliphatic hydrocarbon gases: Alkanes (C1-4)		
Nunavut	OEL STEL	1250 ppm
Nunavut	OEL TWA	1000 ppm
Northwest Territories	OEL STEL	1250 ppm
Northwest Territories	OEL TWA	1000 ppm
Saskatchewan	OEL STEL	1250 ppm
Saskatchewan	OEL TWA	1000 ppm

Aliphatic hydrocarbon gases, alkane (C2-4)		
Alberta	OEL TWA	1000 ppm

8.2. Exposure Controls

Appropriate Engineering Controls: Suitable eye/body wash equipment should be available in the vicinity of any potential exposure. Ensure adequate ventilation, especially in confined areas. Ensure all national/local regulations are observed. Use explosion-proof equipment. Proper grounding procedures to avoid static electricity should be followed. Gas detectors should be used when flammable gases or vapors may be released. Oxygen detectors should be used when asphixiating gases may be released.

Personal Protective Equipment: Gloves. Protective clothing. Protective goggles. Insufficient ventilation: wear respiratory protection. Respiratory protection of the dependent type.

Materials for Protective Clothing: Chemically resistant materials and fabrics. Wear fire/flame resistant/retardant clothing.

Hand Protection: Wear protective gloves. If material is cold, wear thermally resistant protective gloves.

Eye and Face Protection: Chemical safety goggles. Faceshield as determined by task.

Skin and Body Protection: Wear suitable protective clothing.

Respiratory Protection: Use a NIOSH-approved self-contained breathing apparatus whenever exposure may exceed established Occupational Exposure Limits.

Thermal Hazard Protection: Wear thermally resistant protective clothing.

Other Information: When using, do not eat, drink or smoke.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on Basic Physical and Chemical Properties

Physical State	:	Gas
Appearance	:	Colorless
Odor	:	Characteristic
Odor Threshold	:	No data available
pH	:	No data available
Evaporation Rate	:	No data available
Melting Point	:	No data available
Freezing Point	:	No data available
Boiling Point	:	-1 °C (30.2 °F)
Flash Point	:	-73 °C (-99.4 °F)
Auto-ignition Temperature	:	399 °C (750.2 °F)
Decomposition Temperature	:	No data available
Flammability (solid, gas)	:	Extremely flammable gas
Lower Flammable Limit	:	1.9 %
Upper Flammable Limit	:	8.5 %
Vapor Pressure	:	2670 mm Hg (52 psi)
Relative Vapor Density at 20°C	:	No data available
Relative Density	:	2 (air =1)
Specific Gravity	:	No data available
Solubility	:	Water: Not miscible or difficult to mix
Partition Coefficient: N-Octanol/Water	:	No data available
Viscosity	:	No data available
Explosive Properties	:	Contains gas under pressure; may explode if heated

SECTION 10: STABILITY AND REACTIVITY

10.1. Reactivity:

Hazardous reactions will not occur under normal conditions.

10.2. Chemical Stability:

Contains gas under pressure; may explode if heated.

10.3. Possibility of Hazardous Reactions:

Hazardous polymerization will not occur.

10.4. Conditions to Avoid:

Direct sunlight, extremely high or low temperatures, open flames, sources of ignition and incompatible materials.

10.5. Incompatible Materials:

Strong acids, strong bases, strong oxidizers. Oxygen. Chlorine.

10.6. Hazardous Decomposition Products:

Thermal decomposition may produce: Carbon oxides (CO, CO_2).

SECTION 11: TOXICOLOGICAL INFORMATION

11.1. Information on Toxicological Effects – Product

Likely routes of exposure: Dermal. Eye contact. Inhalation.

Acute Toxicity (Oral): Not classified

Acute Toxicity (Dermal): Not classified

Acute Toxicity (Inhalation): Not classified

LD50 and LC50 Data: No additional information available

Skin Corrosion/Irritation: Not classified

Eye Damage/Irritation: Not classified

Respiratory or Skin Sensitization: Not classified

Germ Cell Mutagenicity: Not classified

Carcinogenicity: Not classified

Specific Target Organ Toxicity (Repeated Exposure): Not classified

Reproductive Toxicity: Not classified

Specific Target Organ Toxicity (Single Exposure): Not classified

Aspiration Hazard: Not classified

Symptoms/Injuries After Inhalation: In elevated concentrations may cause asphyxiation, central nervous system effects, and increased breathing rate. Symptoms of asphyxiation include headache, dizziness, rapid breathing, increased pulse, mood changes, tremors, cyanosis, muscular weakness, narcosis, numbness of the extremities, unconsciousness and death.

Symptoms/Injuries After Skin Contact: Contact with gas/liquid escaping the container can cause frostbite and freeze burns.

Symptoms/Injuries After Eye Contact: Contact with gas/liquid escaping the container can cause frostbite, freeze burns, and permanent eye damage.

Symptoms/Injuries After Ingestion: Not considered a potential route of exposure, but contact with gas/liquid escaping the container can cause freeze burns and frostbite.

Chronic Symptoms: None known.

11.2. Information on Toxicological Effects - Ingredient(s)

LD50 and LC50 Data:

n-Butane (106-97-8)	
LC50 Inhalation Rat	30957 mg/m³ (Exposure time: 4 h)
LC50 Inhalation Rat	276798.8 ppm
Propane (74-98-6)	
LC50 Inhalation Rat	> 800000 ppm (Exposure time: 15 min)
n-Pentane (109-66-0)	
LD50 Oral Rat	> 2000 mg/kg
LD50 Dermal Rabbit	3000 mg/kg
LC50 Inhalation Rat	364 g/m³ (Exposure time: 4 h)
LC50 Inhalation Rat	> 20 mg/L/4h

SECTION 12: ECOLOGICAL INFORMATION

12.1. Toxicity

Ecology - General: Harmful to aquatic life with long lasting effects.

Isopentane (78-78-4)	
EC50 Crustacea	2.3 mg/L (Exposure time: 48 h - Species: Daphnia magna)
n-Pentane (109-66-0)	
LC50 Fish	9.87 mg/L (Exposure time: 96 h - Species: Oncorhynchus mykiss)
EC50 Crustacea	9.74 mg/L (Exposure time: 48 h - Species: Daphnia magna)
LC50 Fish	11.59 mg/L (Exposure time: 96 h - Species: Pimephales promelas)
NOEC Chronic Algae	2 mg/L

12.2. Persistence and Degradability

Butane, Normal	
Persistence and Degradability	May cause long-term adverse effects in the environment.

12.3. Bioaccumulative Potential

Butane, Normal	
Bioaccumulative Potential	Not established.
n-Butane (106-97-8)	
Partition coefficient n-octanol/water (Log Pow)	2.31 at 20 °C / 68 °F (at pH 7)
Isobutane (75-28-5)	
BCF Fish	1.57 – 1.97
Partition coefficient n-octanol/water (Log Pow)	1.09 – 2.8 at 20 °C / 68 °F (at pH 7)
Propane (74-98-6)	
Partition coefficient n-octanol/water (Log Pow)	1.09 at 20 °C / 68 °F (at pH 7)

Isopentane (78-78-4)	
Partition coefficient n-octanol/water (Log Pow)	4 at 25 °C / 77 °F (at pH 6.6)

n-Pentane (109-66-0)	
Partition coefficient n-octanol/water (Log Pow)	3.45 at 25 °C / 77 °F (at pH 7)

12.4. Mobility in Soil

No additional information available

12.5. Other Adverse Effects

Other Information: Avoid release to the environment.

SECTION 13: DISPOSAL CONSIDERATIONS

13.1. Waste treatment methods

Waste Treatment Methods: Incineration is the preferred method for disposal of waste product.

Waste Disposal Recommendations: Dispose of contents/container in accordance with local, regional, national, territorial, provincial, and international regulations.

Additional Information: Handle empty containers with care because residual vapors are flammable. Empty gas cylinders should be returned to the vendor for recycling or refilling. Do not puncture or incinerate container.

Ecology - Waste Materials: Avoid release to the environment. This material is hazardous to the aquatic environment. Keep out of sewers and waterways.

SECTION 14: TRANSPORT INFORMATION

The shipping description(s) stated herein were prepared in accordance with certain assumptions at the time the SDS was authored, and can vary based on a number of variables that may or may not have been known at the time the SDS was issued.

14.1. In Accordance with DOT

Proper Shipping Name : PETROLEUM GASES, LIQUEFIED
Hazard Class : 2.1
Identification Number : UN1075
Label Codes : 2.1

ERG Number : 115

14.2. In Accordance with IMDG

Proper Shipping Name : PETROLEUM GASES, LIQUEFIED
Hazard Class : 2.1
Identification Number : UN1075
Label Codes : 2.1

EmS-No. (Fire) : F-D
EmS-No. (Spillage) : S-U

14.3. In Accordance with IATA

Proper Shipping Name : PETROLEUM GASES, LIQUEFIED
Hazard Class : 2.1
Identification Number : UN1075
Label Codes : 2.1

ERG Code (IATA) : 10L

14.4. In Accordance with TDG

Proper Shipping Name : PETROLEUM GASES, LIQUEFIED
Hazard Class : 2.1
Identification Number : UN1075
Label Codes : 2.1

SECTION 15: REGULATORY INFORMATION

15.1. US Federal Regulations

Butane, Normal	
SARA Section 311/312 Hazard Classes	Health hazard - Simple asphyxiant

	Physical hazard - Flammable (gases, aerosols, liquids, or solids) Physical hazard - Gas under pressure

n-Butane (106-97-8)
Listed on the United States TSCA (Toxic Substances Control Act) inventory - Status: Active

Isobutane (75-28-5)
Listed on the United States TSCA (Toxic Substances Control Act) inventory - Status: Active

Propane (74-98-6)
Listed on the United States TSCA (Toxic Substances Control Act) inventory - Status: Active

Isopentane (78-78-4)
Listed on the United States TSCA (Toxic Substances Control Act) inventory - Status: Active

n-Pentane (109-66-0)
Listed on the United States TSCA (Toxic Substances Control Act) inventory - Status: Active

15.2. US State Regulations

n-Butane (106-97-8)
U.S. - New Jersey - Right to Know Hazardous Substance List U.S. - Pennsylvania - RTK (Right to Know) List U.S. - Massachusetts - Right To Know List

Isobutane (75-28-5)
U.S. - New Jersey - Right to Know Hazardous Substance List U.S. - Pennsylvania - RTK (Right to Know) List U.S. - Massachusetts - Right To Know List

Propane (74-98-6)
U.S. - New Jersey - Right to Know Hazardous Substance List U.S. - Pennsylvania - RTK (Right to Know) List U.S. - Massachusetts - Right To Know List

Isopentane (78-78-4)
U.S. - New Jersey - Right to Know Hazardous Substance List U.S. - Pennsylvania - RTK (Right to Know) List U.S. - Massachusetts - Right To Know List

n-Pentane (109-66-0)
U.S. - New Jersey - Right to Know Hazardous Substance List U.S. - Pennsylvania - RTK (Right to Know) List U.S. - Massachusetts - Right To Know List

15.3. Canadian Regulations

n-Butane (106-97-8)
Listed on the Canadian DSL (Domestic Substances List)

Isobutane (75-28-5)
Listed on the Canadian DSL (Domestic Substances List)

Propane (74-98-6)
Listed on the Canadian DSL (Domestic Substances List)

Isopentane (78-78-4)
Listed on the Canadian DSL (Domestic Substances List)

n-Pentane (109-66-0)
Listed on the Canadian DSL (Domestic Substances List)

SECTION 16: OTHER INFORMATION, INCLUDING DATE OF PREPARATION OR LAST REVISION

Date of Preparation or Latest Revision : 07/26/2024

Other Information : This document has been prepared in accordance with the SDS requirements of the OSHA Hazard Communication Standard 29 CFR 1910.1200 and Canada's Hazardous Products Regulations (HPR) SOR/2015-17.

GHS Full Text Phrases:

H220	Extremely flammable gas
H224	Extremely flammable liquid and vapor
H280	Contains gas under pressure; may explode if heated
H304	May be fatal if swallowed and enters airways
H336	May cause drowsiness or dizziness
H401	Toxic to aquatic life
H402	Harmful to aquatic life
H411	Toxic to aquatic life with long lasting effects
H412	Harmful to aquatic life with long lasting effects

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.

NA GHS SDS 2015 (Can, US)