

BUTANE

Section 1. Identification

Common name: BUTANE

Product Code: 0106

Synonym: Liquefied Petroleum Gases (LPG)

Material uses: This product is intended for use as a fuel in devices designed for combustion of butane, or for use in industrial processes. Use in other applications may result in a higher exposure and require additional controls, such as local exhaust ventilation and personal protective equipment.

Supplier / Manufacturer:

Énergie Valero Inc.
1801 McGill College, 13e étage
Montréal
Québec, Canada, H3A 2N4
Phone: 800-295-0391

In case of emergency:

CANUTEC: (613) 996-6666
Quebec Poison Control Center: 800-463-5060
Ontario Regional Poison Information Center (Toronto): 416-813-5900
Ontario Regional Poison Information Center (toll-free): 800-268-9017
Newfoundland Poison Information Center: 709-722-1110
Nova Scotia / PEI Poison Control Center: 800-565-8161
Or call your local Emergency Health Services Center.

Section 2. Hazards identifications

Classification:



Flammable gas, Category 1

Liquefied gas

Germ cell mutagenicity, Category 1B

Carcinogenicity, Category 1A

Signal word: Danger

Hazard statements:

H220: Extremely flammable gas.

H280: Contains gas under pressure; may explode if heated.

H340: May cause genetic defects.

H350: May cause cancer.

Precautionary statements:

P201: Obtain special instructions before use.

P202: Do not handle until all safety precautions have been read and understood.

P210: Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

P280: Wear protective gloves/protective clothing/eye protection/face protection.

P308+P313: If exposed: Call a POISON CENTER or doctor/physician.
P377: Leaking gas fire – do not extinguish unless leak can be stopped safely.
P381: Eliminate all ignition sources if safe to do so.
P403: Store in a well ventilated place.
P405: Store locked up.
P410+P403: Protect from sunlight. Store in a well-ventilated place.
P501: Dispose of contents / container by a local waste disposal company according to regional regulations.

Section 3. Composition and information on ingredients

Name	CAS	Concentration %
Isobutane	75-28-5	0 - 95
n-Butane	106-97-8	0 - 95
1,3-Butadiene	106-99-0	0 - 0.1

Note:

All concentrations are in percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

Section 4. First aid measures

Description of first aid if required:

IF exposed or concerned: Seek medical advice/attention. If you feel unwell, seek medical advice (show the label where possible). Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves. Show this safety data sheet to the doctor in attendance.

Eye contact:

Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Seek medical attention immediately.

Skin contact:

Wash frost-bitten areas with plenty of water. Do not remove clothing. Seek medical attention immediately. When high- pressure isobutane/butane liquid is placed under reduced lower pressure, isobutane/butane vaporizes to be cooled. Thus, skin contact with isobutane/butane may cause frostbite.

Inhalation:

Move to fresh air. If breathing is difficult, give oxygen. If not breathing, give artificial respiration. Call a physician or poison control centre immediately.

Ingestion:

Not likely, due to the form of the product. Ingestion is not a typical route of exposure for gases or liquefied gases.

Indication of immediate medical attention and special treatment needed, if necessary:

Provide general supportive measures and treat symptomatically. Keep victim under observation. Symptoms may be delayed.

Most important acute symptoms and effects:

Direct contact with eyes may cause temporary irritation.

Most important delayed symptoms and effects:

No known chronic effects or symptoms.

Section 5. Firefighting measures

Flammability of the product:

Extremely flammable gas.

Flash point:

-18°C / -0.4°F (Closed cup)

Auto-ignition temperature:

360°C / 680°F

Products of combustion:

Data not available

Special protective actions for firefighters:

Self-contained breathing apparatus and full protective clothing must be worn in case of fire. In case of fire and/or explosion do not breathe fumes. **DO NOT EXTINGUISH A LEAKING GAS FIRE UNLESS LEAK CAN BE STOPPED.** In case of fire: Stop leak if safe to do so. Do not move cargo or vehicle if cargo has been exposed to heat. If tank, rail car or tank truck is involved in a fire, ISOLATE for 800 meters (0.5 mile) in all directions; also consider initial evacuation for 800 meters (1/2 mile) in all directions. ALWAYS stay away from tanks engulfed in flame. Move containers from fire area if you can do so without risk. Do not direct water at source of leak or safety devices as icing may occur. Use water spray to cool unopened containers. Withdraw immediately in case of rising sound from venting safety device or any discoloration of tanks due to fire. For massive fire in cargo area, use unmanned hose holder or monitor nozzles, if possible. If not, withdraw and let fire burn out. Promptly isolate the scene by removing all persons from the vicinity of the incident. No action shall be taken involving any personal risk or without suitable training. For fires involving this material, do not enter any enclosed or confined fire space without proper protective equipment, including self-contained breathing apparatus. Stop flow of material. and to protect personnel effecting shutoff. If a leak or spill has not ignited, use water spray to disperse the vapors and to protect personnel attempting to stop leak. Prevent runoff from fire control or dilution from entering streams, sewers or drinking water supply.

Suitable extinguishing media:

Water spray. Water fog. Foam. Dry chemical powder. Carbon dioxide (CO₂).

in presence of various substances:

Vapors may form explosive mixtures with air. Vapors may travel considerable distance to a source of ignition and cause flashback. During fire, gases hazardous to health may be formed.

Specific hazard arising from the chemical:

Extremely flammable gas. Contents under pressure. Pressurised container may explode when exposed to heat or flame.

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures:

For non emergency personnel: Evacuate the area.

For emergency personnel: Evacuate the area promptly. Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). Keep out of low areas. Many gases are heavier than air and will spread along ground and collect in low or confined areas (sewers, basements, tanks). Emergency personnel need self-contained breathing equipment. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ventilate closed spaces before entering them. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the safety data sheet. No action shall be taken involving any personal risk or without suitable training. In case of inadequate ventilation, use respiratory protection.

Environmental precautions:

Avoid release to the environment. Inform appropriate managerial or supervisory personnel of all environmental releases. Prevent further leakage or spillage if safe to do so. Avoid discharge into drains, water courses or onto the ground. Prevent from entering into soil, ditches, sanitary sewers, waterways and/or groundwater.

Methods and material for containment and cleaning up:

Refer to attached safety data sheets and/or instructions for use. Stop leak if you can do so without risk. If possible, turn leaking containers so that gas escapes rather than liquid. Use water spray to reduce vapors or divert vapor cloud drift. Isolate area until gas has dispersed. Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). Keep combustibles (wood, paper, oil etc.) away from spilled material. The product is immiscible with water and will spread on the water surface. Prevent product from entering drains. For waste disposal, see section 13 of the safety data sheet. Ventilate well, stop flow of gas or liquid if possible. Immediately contact emergency personnel.

Section 7. Handling and storage

Precautions in Handling:

Do not handle, store or open near an open flame, sources of heat or sources of ignition. Protect material from direct sunlight. Do not smoke. All equipment used when handling the product must be grounded. Use only with adequate ventilation. Close valve after each use and when empty. Protect cylinders from physical damage; do not drag, roll, slide, or drop. When moving cylinders, even for short distances, use a cart (trolley, hand truck, etc.) designed to transport cylinders. Suck back of water into the container must be prevented. Do not allow backfeed into the container. Purge air from system before introducing gas. Use only properly specified equipment which is suitable for this product, its supply pressure and temperature. Contact your gas supplier if in doubt. Do not breathe gas. Do not get in eyes, on skin, on clothing. Avoid prolonged exposure. Wear appropriate personal protective equipment. Avoid release to the environment. Observe good industrial hygiene practices. Eliminate sources of ignition. Avoid spark promoters. These alone may be insufficient to remove static electricity. Wear appropriate personal protective equipment (See Section 8). Eating, drinking, and smoking should be prohibited in areas where this material is handled, stored, and processed. Oxygen concentration should not fall below 19.5% at sea level ($pO_2 = 135$ mmHg).

Precautions in Storage:

Keep away from heat, sparks and open flame. This material can accumulate static charge which may cause spark and become an ignition source. Prevent electrostatic charge build-up by using common bonding and grounding techniques. Secure cylinders in an upright position at all times, close all valves when not in use. Store in a cool, dry and ventilated place out of direct sunlight. Store in original tightly closed container. Store in a well-ventilated place. Cylinders should be stored upright, with valve protection cap in place, and firmly secured to prevent falling or being knocked over. Stored containers should be periodically checked for general condition and leakage. Store away from incompatible materials (see section 10 of the safety data sheet). Store in accordance with local, regional, national, and international regulations. Keep container tightly closed and sealed until ready for use. Protect cylinders from damage.

Section 8. Exposure Controls, Personal Protections

Control parameters:

Component	CAS	Value	Control parameters	Basis
Isobutane	75-28-5	STEL	1000 ppm	USA - ACGIH
n-Butane	106-97-8	STEL	1000 ppm	USA - ACGIH
		TWA	1000 ppm	Canada - Alberta
		STEL	750 ppm	Canada - British Columbia
		TWA	600 ppm	Canada - British Columbia
		STEL	1000 ppm	Canada - Manitoba
		TWA	800 ppm	Canada - Ontario
		TWA	1900 mg/m ³	Canada - Québec
		TWA	800 ppm	Canada - Québec
1,3-Butadiene	106-99-0	TWA	2 ppm	USA - ACGIH
		TWA	4.4 mg/m ³	Canada - Alberta
		TWA	2 ppm	Canada - Alberta
		TWA	2 ppm	Canada - British Columbia
		TWA	2 ppm	Canada - Manitoba
		TWA	2 ppm	Canada - Ontario
		TWA	4 mg/m ³	Canada - Québec
		TWA	2 ppm	Canada - Québec

Engineering controls:

Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. The engineering controls also need to keep gas, vapor, or dust concentrations below any lower explosive limits. Oxygen concentration should not fall below 19.5% at sea level (pO₂ = 135mmHg).

Personal protective equipment:

Eyes: Wear safety glasses with side shields (or goggles).

Skin/body: Wear protective clothing appropriate for the risk of exposure. Wear appropriate thermal protective clothing, when necessary.

Respiratory: If engineering controls do not maintain airborne concentrations below recommended exposure limits (where applicable) or to an acceptable level (in countries where exposure limits have not been established), an approved respirator must be worn.

Hands: Wear appropriate chemical resistant gloves.

Other: Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Do not eat, drink or smoke when using the product. Provide eyewash station and safety shower. Handle in accordance with good industrial hygiene and safety practices.

Section 9. Physical and chemical properties

Physical state: Gas

Color: Colourless

Odor: Odourless. May have gas odorant added (ethylmercaptan).

Melting point/Freezing point: From -138°C / -216.4°F to -190°C / -310°F

Boiling point: From 285.8°C / 546.44°F to 380°C / 716°F

Appearance: Liquefied gas

Lower explosion limit: 1.8 %

Upper explosion limit: 8.4 %

Flash point: -18°C / -0.4°F (Closed cup)

Auto-ignition temperature: 360°C / 680°F

Decomposition temperature: Data not available

pH: Data not available

Solubility: Trace

Partition in coefficient n-octanol/water: 2.89

Vapor pressure: ≤ 483 kPa (37.8 °C (100.04 °F))

Density: 0.6

Relative vapor density: 2.07

Section 10. Stability and reactivity

Chemical reactivity: The product is stable and non-reactive under normal conditions of use, storage and transport.

Chemical stability: Stable under normal temperature conditions and recommended use.

Possibility of hazardous reactions: Hazardous polymerisation does not occur.

Conditions to avoid: Avoid heat, sparks, open flames and other ignition sources. Avoid temperatures exceeding the flash point. Avoid contact with incompatible materials. In a fire or if heated, a pressure increase will occur and the container may burst or explode.

Incompatible materials: Acids, strong oxidizing agents, oxidizing agents, reducing agents, nitrates, fluorine, chlorine, alkalis.

Hazardous decomposition products: No hazardous decomposition products are known.

Section 11. Toxicological information

Acute toxicity:

Component	CAS	Value
n-Butane	106-97-8	CL ₅₀ Inhalation: Mouse = 202000 ppm - 4h

Skin corrosion/irritation:

Not applicable

Serious eye damage/irritation:

Not applicable

Respiratory or skin sensitisation:

Not applicable

Germ cell mutagenicity:

1,3-Butadiene: May cause genetic defects.

Carcinogenicity:

1,3-Butadiene: May cause cancer.

Reproductive toxicity:

Not applicable

STOT- Single exposure:

Not applicable

STOT- repeated exposure:

Not applicable

Aspiration hazard:

Not applicable

Information on likely route of exposure:

Skin, eyes, inhalation and ingestion.

Section 12. Ecological information

Ecological data for aquatic environments:

None

Persistence and degradability:

Data not available

Bioaccumulative potential:

Data not available

Mobility in soil:

Data not available

Other adverse effects:


The product contains volatile organic compounds which have a photochemical ozone creation potential.


Section 13. Disposal considerations


Waste disposal:


Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Do not allow this material to drain into sewers/water supplies. Do not contaminate ponds, waterways or ditches with chemical or used container. Dispose of contents/container in accordance with local/regional/national/international regulations. Empty containers may contain product residues. Do not puncture or incinerate even when empty. This material and/or its container must be disposed of as hazardous waste. Return the empty cylinder to the supplier. Dispose in accordance with all applicable regulations. Since emptied containers may retain product residue, follow label warnings even after container is emptied. Empty containers should be taken to an approved waste handling site for recycling or disposal.

Section 14. Transportation information

TDG		
UN #: UN1075	Proper shipping name: LIQUEFIED PETROLEUM GASES	
Class: 2.1	Packing group: N/A	
		

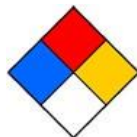
DOT		
UN #: UN1075	Proper shipping name: LIQUEFIED PETROLEUM GASES	
Class: 2.1	Packing group: N/A	
		

IMDG			
UN #: UN1075	Proper shipping name: LIQUEFIED PETROLEUM GASES		
Class: 2.1	Packing group: N/A	EMS-No: F-D, S-U	
			
Marine pollutant: No		Poison Inhalation Hazard: No	

IATA		
UN #: UN1075	Proper shipping name: LIQUEFIED PETROLEUM GASES	
Class: 2.1	Packing group: N/A	
		

Section 15. Regulatory information

NFPA Classification:



Health : 1
 Flammable : 4
 Stability : 0
 Special hazards : 0

Legend: 4: Severe, 3: High, 2: Moderate, 1: Slightly, 0: Not hazardous

General product information:

Canada: This product has been classified in accordance with the hazard criteria of the hazard product regulations and the safety data sheet contains all the information required by the hazard product regulations.

Section 16. Additional information

Date of issue:

2021-09-15

Version:

1.00

Elaborated by:

Toxyscan Inc.

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