

SAFETY DATA SHEET

1. Identification

Product identifier Butane

Other means of identification

SDS number WC026

Recommended use Hand Torch Fuel

Recommended restrictions None known.

Manufacturer/Importer/Supplier/Distributor information

Manufacturer/Supplier Worthington Cylinder Corporation

Address 200 Old Wilson Bridge Road
Columbus, OH 43085
United States

Email: cylinders@worthingtonindustries.com

Telephone Number: 866-928-2657

CHEMTREC - 24 HOURS:

Within US and Canada 800-424-9300

Outside US and Canada +1 703-741-5970 (collect calls accepted)

2. Hazard(s) identification

Physical hazards Flammable gases Category 1
Gases under pressure Liquefied gas

Health hazards Not classified.

OSHA defined hazards Not classified.

Label elements



Signal word Danger

Hazard statement Extremely flammable gas. Contains gas under pressure; may explode if heated.

Precautionary statement

Prevention Keep away from heat/sparks/open flames/hot surfaces. - No smoking.

Response Leaking gas fire: Do not extinguish, unless leak can be stopped safely. Eliminate all ignition sources if safe to do so.

Storage Protect from sunlight. Store in a well-ventilated place.

Disposal Dispose of waste and residues in accordance with local authority requirements.

Hazard(s) not otherwise classified (HNOC) May displace oxygen and cause rapid suffocation.

3. Composition/information on ingredients

Mixtures

Chemical name	CAS number	%
Isobutane	75-28-5	60-80
Butane	106-97-8	20-40

4. First-aid measures

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

Skin contact	Remove contaminated clothing immediately and wash skin with soap and water. Get medical attention if irritation develops and persists. If frostbite occurs, immerse involved area in warm water (between 100°F/38°C and 110°F/43°C, not exceeding 112°F/44°C). Keep immersed for 20 to 40 minutes. Seek medical assistance.
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. Get medical attention immediately.
Ingestion	Ingestion is not a typical route of exposure for gases or liquefied gases.
Most important symptoms/effects, acute and delayed	Exposure to rapidly expanding gas or vaporizing liquid may cause frostbite ("cold burn"). Very high exposure can cause suffocation from lack of oxygen. May cause drowsiness or dizziness.
Indication of immediate medical attention and special treatment needed	Exposure may aggravate pre-existing respiratory disorders. Treat symptomatically.
General information	Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

5. Fire-fighting measures

Suitable extinguishing media	Dry chemical, CO2, water spray, fog, or foam.
Unsuitable extinguishing media	Full water jet.
Specific hazards arising from the chemical	Selection of respiratory protection for firefighting: follow the general fire precautions indicated in the workplace.
Special protective equipment and precautions for firefighters	Self-contained breathing apparatus and full protective clothing must be worn in case of fire.
Fire fighting equipment/instructions	Move container from fire area if it can be done without risk. Do not extinguish fires unless gas flow can be stopped safely; explosive re-ignition may occur. 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. Use water to keep fire exposed containers cool 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.
Specific methods	Use standard firefighting procedures and consider the hazards of other involved materials.
General fire hazards	Extremely flammable gas.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures	Evacuate the area promptly. No action shall be taken involving any personal risk or without suitable training. Keep unnecessary personnel away. Ensure adequate ventilation. In case of inadequate ventilation, use respiratory protection. Wear appropriate personal protective equipment (See Section 8).
Methods and materials for containment and cleaning up	Ventilate well, stop flow of gas or liquid if possible. Immediately contact emergency personnel. For waste disposal, see Section 13 of the SDS.
Environmental precautions	Should not be released into the environment. Prevent further leakage or spillage if safe to do so. Prevent from entering into soil, ditches, sanitary sewers, waterways and/or groundwater.

7. Handling and storage

Precautions for safe 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. Do not breathe gas. Do not get in eyes, on skin, on clothing. Avoid prolonged exposure. Wear appropriate personal protective equipment. Observe good industrial hygiene practices. Keep away from heat, spark, open flames and other sources of ignition. 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. Risk of vapor concentration on the floor and in low-lying areas.
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Conditions for safe storage, including any incompatibilities

Do not store, incinerate, or heat this material above 120 degrees Fahrenheit. 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. Store in a cool, dry place out of direct sunlight. Secure cylinders in an upright position at all times, close all valves when not in use. Store in a well-ventilated place. Store away from incompatible materials (see Section 10 of the SDS). Store in accordance with local, regional, national, and international regulations. Keep container tightly closed and sealed until ready for use. Protect cylinders from damage.

8. Exposure controls/personal protection**Occupational exposure limits****US. ACGIH Threshold Limit Values**

Components	Type	Value
Butane (CAS 106-97-8)	STEL	1000 ppm
Isobutane (CAS 75-28-5)	STEL	1000 ppm

US. NIOSH: Pocket Guide to Chemical Hazards

Components	Type	Value
Butane (CAS 106-97-8)	TWA	1900 mg/m3 800 ppm
Isobutane (CAS 75-28-5)	TWA	1900 mg/m3 800 ppm

Biological limit values

No biological exposure limits noted for the ingredient(s).

Exposure guidelines

Follow standard monitoring procedures.

Appropriate engineering controls

Provide adequate ventilation. Use process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below recommended exposure limits.

Individual protection measures, such as personal protective equipment

Eye/face protection Wear approved safety glasses or goggles.

Skin protection**Hand protection**

Wear appropriate chemical resistant gloves.

Other

Wear protective clothing appropriate for the risk of exposure.

Respiratory protection

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.

Thermal hazards

Contact with liquefied gas might cause frostbites, in some cases with tissue damage. Wear appropriate thermal protective clothing, when necessary.

General hygiene considerations

Do not eat, drink or smoke when using the product. Wash thoroughly after handling. Provide eyewash station and safety shower. Handle in accordance with good industrial hygiene and safety practices.

9. Physical and chemical properties**Appearance****Physical state**

Gas (Liquefied).

Form

Compressed liquefied gas.

Color

Colorless.

Odor

Faint. Gasoline-like.

Odor threshold

Not available.

pH

Not available.

Melting point/freezing point

-216.76 °F (-138.2 °C)

Initial boiling point and boiling range

-11.7 °F (-24.28 °C)

Flash point

-76.3 °F (-60.2 °C)

Evaporation rate

Not available.

Flammability (solid, gas)

Flammable gas.

Upper/lower flammability or explosive limits

Flammability limit - lower (%) 1.8 %

Butane

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Flammability limit - upper (%)	8.4 %
Vapor pressure	28 psig (Approximate)
Vapor density	> 2 (Air = 1)
Relative density	0.57 (H2O = 1)
Solubility(ies)	
Solubility (water)	< 0.1 % in water at 70°F
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	548.33 °F (286.85 °C)
Decomposition temperature	Not available.
Viscosity	Not available.
Other information	
Molecular formula	C4-H10
Molecular weight	58.12 g/mol
Percent volatile	100 %

10. Stability and reactivity

Reactivity	The product is non-reactive under normal conditions of use, storage and transport.
Chemical stability	Stable under normal temperature conditions and recommended use.
Possibility of hazardous reactions	Polymerization will not occur. May form explosive mixture with air. This product may react with oxidizing agents.
Conditions to avoid	Heat, flames and sparks.
Incompatible materials	Strong oxidizing agents. Strong acids. Halogens.
Hazardous decomposition products	Carbon oxides. Hydrocarbons.

11. Toxicological information

Information on likely routes of exposure

Inhalation	High concentrations: Suffocation (asphyxiant) hazard - if allowed to accumulate to concentrations that reduce oxygen below safe breathing levels. Breathing of high concentrations may cause dizziness, light-headedness, headache, nausea and loss of coordination. Continued inhalation may result in unconsciousness.
Skin contact	Contact with liquefied gas may cause frostbite.
Eye contact	Contact with liquefied gas may cause frostbite.
Ingestion	Not likely, due to the form of the product.
Symptoms related to the physical, chemical and toxicological characteristics	Exposure to rapidly expanding gas or vaporizing liquid may cause frostbite ("cold burn"). Very high exposure can cause suffocation from lack of oxygen. May cause drowsiness or dizziness.

Information on toxicological effects

Acute toxicity	High concentration: Suffocation (asphyxiant) hazard - if allowed to accumulate to concentrations that reduce oxygen below safe breathing levels.
Skin corrosion/irritation	Contact with liquefied gas might cause frostbites, in some cases with tissue damage.
Serious eye damage/eye irritation	Direct contact with liquefied gas may cause eye damage from frostbite.
Respiratory or skin sensitization	
Respiratory sensitization	Not classified.
Skin sensitization	Not classified.
Germ cell mutagenicity	Not classified.
Carcinogenicity	Not classified.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not listed.

Reproductive toxicity	Not classified.
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Specific target organ toxicity - single exposure	Not classified.
Specific target organ toxicity - repeated exposure	Not classified.
Aspiration hazard	Not classified.
Chronic effects	May cause central nervous system effects.

12. Ecological information

Ecotoxicity	Not expected to be harmful to aquatic organisms.
Persistence and degradability	The product is readily biodegradable.
Bioaccumulative potential	The product is not expected to bioaccumulate.

Partition coefficient n-octanol / water (log Kow)

Butane (CAS 106-97-8)	2.89
Isobutane (CAS 75-28-5)	2.76

Mobility in soil	May evaporate quickly.
Mobility in general	May evaporate quickly.
Other adverse effects	None known.

13. Disposal considerations

Disposal instructions	Use the container until empty. Do not dispose of any non-empty container. Empty containers have residual vapor that is flammable and explosive. Cylinders should be emptied and returned to a hazardous waste collection point. Do not puncture or incinerate even when empty. Dispose in accordance with all applicable regulations.
Local disposal regulations	Dispose in accordance with all applicable regulations.
Hazardous waste code	D001: Waste Flammable material with a flash point <140 °F
Waste from residues / unused products	Dispose of in accordance with local regulations.
Contaminated packaging	Since emptied containers may retain product residue, follow label warnings even after container is emptied.

14. Transport information

DOT

UN number	UN1011
UN proper shipping name	Butane
Transport hazard class(es)	
Class	2.1
Subsidiary risk	-
Label(s)	2.1
Packing group	Not applicable.
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.
Special provisions	19, T50
Packaging exceptions	306
Packaging non bulk	304
Packaging bulk	314, 315

IATA

UN number	UN1011
UN proper shipping name	Butane
Transport hazard class(es)	
Class	2.1
Subsidiary risk	-
Label(s)	2.1
Packing group	Not applicable.
Environmental hazards	No.
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.

IMDG

UN number	UN1011
UN proper shipping name	Butane

Transport hazard class(es)**Class** 2.1**Subsidiary risk** -**Label(s)** 2.1**Packing group** Not applicable.**Environmental hazards****Marine pollutant** No.**EmS** F-D, S-U**Special precautions for user** Read safety instructions, SDS and emergency procedures before handling.**Transport in bulk according to** Not applicable.**Annex II of MARPOL 73/78 and****the IBC Code****15. Regulatory information**

US federal regulations This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.
All components are on the U.S. EPA TSCA Inventory List.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not regulated.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not listed.

CERCLA Hazardous Substance List (40 CFR 302.4)

Butane (CAS 106-97-8) LISTED

Isobutane (CAS 75-28-5) LISTED

Superfund Amendments and Reauthorization Act of 1986 (SARA)**Hazard categories** Immediate Hazard - No

Delayed Hazard - No

Fire Hazard - Yes

Pressure Hazard - Yes

Reactivity Hazard - No

SARA 302 Extremely hazardous substance

Not listed.

SARA 311/312 Hazardous chemical Yes**SARA 313 (TRI reporting)**

Not regulated.

Other federal regulations**Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List**

Not regulated.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

Butane (CAS 106-97-8)

Isobutane (CAS 75-28-5)

Safe Drinking Water Act (SDWA) Not regulated.**US state regulations****US. Massachusetts RTK - Substance List**

Butane (CAS 106-97-8)

Isobutane (CAS 75-28-5)

US. New Jersey Worker and Community Right-to-Know Act

Butane (CAS 106-97-8)

Isobutane (CAS 75-28-5)

US. Pennsylvania Worker and Community Right-to-Know Law

Butane (CAS 106-97-8)

Isobutane (CAS 75-28-5)

US. Rhode Island RTK

Butane (CAS 106-97-8)

Isobutane (CAS 75-28-5)

US. California Proposition 65

California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65): This material is not known to contain any chemicals currently listed as carcinogens or reproductive toxins.

International Inventories

Country(s) or region	Inventory name	On inventory (yes/no)*
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	Yes
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

*A "Yes" indicates this product complies with the inventory requirements administered by the governing country(s).

A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

16. Other information, including date of preparation or last revision

Issue date	28-May-2015
Revision date	-
Version #	01
Further information	Hazard Scale: 0 = Minimal 1 = Slight 2 = Moderate 3 = Serious 4 = Severe
HMIS® ratings	Health: 1 Flammability: 4 Physical hazard: 1

NFPA ratings



Disclaimer

All information in this Material Safety Data Sheet is believed to be accurate and reliable. However, no guarantee or warranty of any kind is made with regard to the accuracy of information or the suitability of the recommendations contained herein. It is the user's responsibility to assess the safety and toxicity of this product under their own conditions of use and to comply with all applicable laws and regulations. Worthington Cylinder Corporation cannot anticipate all conditions under which this information and its product, or the products of other manufacturers in combination with its product, may be used. It is the user's responsibility to ensure safe conditions for handling, storage and disposal of the product, and to assume liability for loss, injury, damage or expense due to improper use. The information in the sheet was written based on the best knowledge and experience currently available.