SAFETY DATA SHEET

WORTHINGTON ENTERPRISES

Section 1 - Identification

Product identifier **Butane - BF55 and BF9**

Other means of identification

SDS No. WC026

Recommended use of the chemical and restrictions on use

Recommended use Butane refill cylinder.

Restrictions on use None known.

Details of manufacturer or importer

Manufacturer/Supplier Worthington Cylinder Corporation

Address 300 E. Breed St.
Chilton, WI 53014
United States of America

Email SDSRequest@wthg.com

Telephone 1-800-359-9678

Emergency telephone CHEMTREC 1-800-424-9300 (USA)
1-703-527-3887 International
(CCN 628056)

Section 2 - Hazard(s) identification

Classification of the hazardous chemical

Physical hazards	Flammable gases	Category 1A
	Gases under pressure	Liquefied gas
Health hazards	Not classified.	

Label elements, including precautionary statements

Hazard symbol(s)

Flame Gas cylinder

Signal word Danger

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

Precautionary statement(s)

Prevention Keep container tightly closed. Use only with adequate ventilation. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

Response Leaking gas fire: Do not extinguish, unless leak can be stopped safely. In case of leakage, eliminate all ignition sources.

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

Disposal Not assigned.

Supplemental information Contact with liquefied gas may cause frostbite.

Other hazards which do not result in classification May displace oxygen and cause rapid suffocation.

Section 3 - Composition and information on ingredients

Mixture

Identity of chemical ingredients	CAS number and other unique identifiers	Concentration of ingredients
Isobutane	75-28-5	60 - 100
Butane	106-97-8	0 - 40

Composition comments Gas concentrations are in percent by volume.

Section 4 - First aid measures

Description of necessary first aid measures

Inhalation Remove from further exposure. For those providing assistance, avoid exposure to yourself or others. Use adequate respiratory protection. If respiratory tract irritation, dizziness, nausea, or unconsciousness occurs, seek immediate medical assistance. If breathing has stopped, assist ventilation with a mechanical device or use mouth-to-mouth resuscitation.

Skin contact Not likely, due to the form of the product. If frostbite occurs, immerse affected area in warm water (not exceeding 105°F/41°C). Keep immersed for 20 to 40 minutes. Get medical attention immediately.

Eye contact Not likely, due to the form of the product. If frostbite occurs, immediately flush eyes with plenty of warm water (not exceeding 105°F/41°C) for at least 15 minutes. If easy to do, remove contact lenses. Get medical attention promptly if symptoms persist or occur after washing.

Ingestion This material is a gas under normal atmospheric conditions and ingestion is unlikely.

Personal protection for first-aid responders 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. First aid personnel must be aware of own risk during rescue.

Symptoms caused by exposure Exposure to rapidly expanding gas or vapourizing liquid may cause frostbite ("cold burn"). Very high exposure can cause suffocation from lack of oxygen. Symptoms may include loss of mobility/consciousness. Victim may not be aware of asphyxiation. Asphyxiation may bring about unconsciousness without warning and so rapidly that victim may be unable to protect themself.

Medical attention and special treatment Provide general supportive measures and treat symptomatically. Exposure may aggravate pre-existing respiratory disorders.

Section 5 - Firefighting measures

Extinguishing media

Suitable extinguishing equipment Water fog. Foam. Dry chemical powder. Carbon dioxide (CO2).

Unsuitable extinguishing equipment Do not use water jet as an extinguisher, as this will spread the fire.

Specific hazards arising from the chemical Extremely flammable gas. May form explosive mixtures with air. Gas may travel considerable distance to a source of ignition and flash back. During fire, gases hazardous to health may be formed.

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 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.

Hazchem code 2YE

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

Specific methods Use standard firefighting procedures and consider the hazards of other involved materials. Cool containers exposed to flames with water until well after the fire is out.

Section 6 - Accidental release measures

Personal precautions, protective equipment and emergency procedures

For non-emergency personnel	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). Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Wear appropriate personal protective equipment.
For emergency responders	Keep unnecessary personnel away. In the event of a leak evacuate all personnel until ventilation can restore oxygen concentrations to safe levels. Wear appropriate protective equipment and clothing during clean-up. Keep people away from and upwind of spill/leak. Keep out of low areas. Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). Ventilate closed spaces before entering them. Emergency personnel need self-contained breathing equipment. Local authorities should be advised if significant spillages cannot be contained. Use personal protection recommended in Section 8 of the SDS.
Environmental precautions	Should not be released into the environment. Prevent further leakage or spillage if safe to do so.
Methods and materials for containment and cleaning up	Stop leak if you can do so without risk. If possible, turn leaking containers so that gas escapes rather than liquid. 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. For waste disposal, see section 13 of the SDS.

Section 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. Do not breathe gas. Avoid prolonged exposure. Do not enter storage areas or confined spaces unless adequately ventilated. Use only outdoors or in a well-ventilated area. Oxygen concentration should not fall below 19.5 % at sea level (pO2 = 135 mmHg). Mechanical ventilation or local exhaust ventilation may be required. Wear appropriate personal protective equipment. Observe good industrial hygiene practices.
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. Cylinders should be stored upright, with valve protection cap in place, and firmly secured to prevent falling or being knocked over. Protect cylinders from damage. Store in a well-ventilated place. Store in tightly closed container. Store away from incompatible materials (see section 10 of the SDS).

Section 8 - Exposure controls and personal protection

Control parameters Follow standard monitoring procedures.

Occupational exposure limits

Australia. National Workplace OELs (Workplace Exposure Standards for Airborne Contaminants, Appendix A)

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

US. ACGIH Threshold Limit Values (TLV)

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

UK. OELs. Workplace Exposure Limits (WELs) (EH40/2005 (Fourth Edition 2020)), Table 1

Components	Type	Value
Butane (CAS 106-97-8)	STEL	1810 mg/m3 750 ppm
	TWA	1450 mg/m3 600 ppm

Germany. DFG MAK List (advisory OELs). Commission for the Investigation of Health Hazards of Chemical Compounds in the Work Area (DFG), as updated

Components	Type	Value
Butane (CAS 106-97-8)	TWA	2400 mg/m3
		1000 ppm
Isobutane (CAS 75-28-5)	TWA	2400 mg/m3
		1000 ppm

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

Exposure guidelines Follow standard monitoring procedures.

Control banding Follow standard monitoring procedures. Not established.

Engineering controls Provide adequate ventilation and minimize the risk of inhalation of gas. 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 (PPE)

Eye/face protection Wear approved safety glasses or goggles. Face shield is recommended.

Skin protection

Hand protection Wear cold insulating 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.
Wear a respirator meeting Australian/New Zealand Standards AS/NZS 1716 and AS/NZS 1715.
WARNING! Air-purifying respirators do not protect workers in oxygen deficient atmospheres.

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

Hygiene measures 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.

Section 9 - Physical and chemical properties

Physical state Gas (Liquefied).

Form Compressed liquefied gas.

Colour Colourless, clear.

Odour Sweet petroleum.

Odour threshold Not available.

pH Not available.

Melting point/freezing point Not available.

Boiling point and boiling range -11.72 °C (10.9 °F)

Flash point -82.78 °C (-117 °F) Open cup

Evaporation rate > 1 (Ethyl ether = 1)

Upper/lower explosive limits

Explosion limit - lower (%) 1.8 % v/v

Explosion limit - upper (%) 8.4 % v/v

Vapour pressure 213.74 kPa @ (70°F/21°C)

Vapour density 2.006 (Air=1)

Relative density 0.564 (Water=1)

Solubility

Solubility (water) 0.008% Insoluble (<0.1%)

Solubility temp. (water) 21 °C (69.8 °F)

Flammability (solid, gas) Extremely flammable gas.

Partition coefficient: n-octanol/water	Not applicable for mixtures.
Auto-ignition temperature	460 °C (860 °F)
Decomposition temperature	Not available.
Viscosity	Not applicable.
Particle characteristics	Not available.
Data relevant with regard to physical hazard classes	No relevant additional information available.

Other physical and chemical parameters

Explosive properties	Not explosive.
Oxidising properties	Not oxidising.
Percent volatile	100 %

Section 10 - Stability and reactivity

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	Polymerization will not occur. May form explosive mixture with air. This product may react with oxidizing agents.
Conditions to avoid	Avoid heat, sparks, open flames and other ignition sources. Avoid temperatures exceeding the flash point. Contact with incompatible materials.
Incompatible materials	Strong oxidising agents. Halogens. Nitrates.
Hazardous decomposition products	Thermal decomposition of this product can generate carbon monoxide and carbon dioxide. Hydrocarbons.

Section 11 - Toxicological information

Information on possible 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 co-ordination. 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	This material is a gas under normal atmospheric conditions and ingestion is unlikely.
Early onset symptoms related to exposure	Very high exposure can cause suffocation from lack of oxygen. Symptoms may include loss of mobility/consciousness. Victim may not be aware of asphyxiation. Asphyxiation may bring about unconsciousness without warning and so rapidly that victim may be unable to protect themself. Exposure to rapidly expanding gas or vapourizing liquid may cause frostbite ("cold burn").
Delayed health effects from exposure	Exposure over a long period of time may cause central nervous system effects.
Acute toxicity	Not expected to be acutely toxic.

Components	**Species**	**Test Results**
Butane (CAS 106-97-8)		
Acute		
Inhalation		
LC50	Rat	658 mg/l, 4 Hours

Skin corrosion/irritation	Not classified.
Serious eye damage/irritation	Not classified.

Respiratory or skin sensitisation

Respiratory sensitisation	Not a respiratory sensitiser.
Skin sensitisation	This product is not expected to cause skin sensitisation.

Germ cell mutagenicity	No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.
Carcinogenicity	Not classifiable as to carcinogenicity to humans.
Reproductive toxicity	This product is not expected to cause reproductive or developmental effects.
Specific target organ toxicity - single exposure	Not classified.
Specific target organ toxicity - repeated exposure	Not classified.
Aspiration hazard	Not relevant, due to the form of the product.
Chronic effects	Exposure over a long period of time may cause central nervous system effects.

Section 12 - Ecological information

Ecotoxicity	The product is not expected to be hazardous to the environment.
Persistence and degradability	Not relevant, due to the form of the product.
Bioaccumulative potential	Not relevant, due to the form of the product.
Partition coefficient n-octanol / water (log Kow)	Not applicable for mixtures.
Butane (CAS 106-97-8)	2.89
Isobutane (CAS 75-28-5)	2.76
Mobility in soil	Not relevant, due to the form of the product.
Other adverse effects	The product contains volatile organic compounds which have a photochemical ozone creation potential.

Section 13 - Disposal considerations

Disposal methods	Collect and reclaim or dispose in sealed containers at licensed waste disposal site. 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 of contents/container in accordance with local/regional/national/international regulations.
Residual waste	Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner. Dispose in accordance with all applicable regulations.
Contaminated packaging	Empty containers should be taken to an approved waste handling site for recycling or disposal.

Section 14 - Transport information

ADG

UN number	1011
UN proper shipping name	BUTANE
Transport hazard class(es)	
Class	2.1
Subsidiary hazard	-
Packing group	-
Environmental hazards	No
Hazchem code	2YE
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.

RID

UN number	1011
UN proper shipping name	BUTANE
Transport hazard class(es)	
Class	2.1
Subsidiary hazard	-
Label(s)	2.1 (+13)
Packing group	-
Environmental hazards	No
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.

IATA

UN number	1011

UN proper shipping name	Butane
Transport hazard class(es)	
Class	2.1
Subsidiary hazard	-
Label(s)	2.1
Packing group	-
Environmental hazards	No
ERG Code	10L
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.

IMDG

UN number	1011
UN proper shipping name	BUTANE
Transport hazard class(es)	
Class	2.1
Subsidiary hazard	-
Packing group	-
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 Annex II of MARPOL 73/78 and the IBC Code Not applicable.

Section 15 - Regulatory information

Safety, health and environmental regulations

National regulations This Safety Data Sheet was prepared in accordance with Australia Model Code of Practice for the preparation of Safety Data Sheets for Hazardous Chemicals.

Australia Medicines & Poisons Appendix E

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

Australia Medicines & Poisons Schedule 5

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

High Volume Industrial Chemicals (HVIC)

Not listed.

Importation of Ozone Depleting Substances (Customs(Prohibited imports) Regulations 1956, Schedule 10, as amended)

Not listed.

National Pollutant Inventory (NPI) substance reporting list

Not listed.

Prohibited Carcinogenic Substances

Not regulated.

Prohibited Substances (National Model Regulation for the control of Workplace Hazardous Substances, Schedule 2 NOHSC:1005 (1994) as amended)

Not listed.

Restricted Carcinogenic Substances

Not regulated.

Restricted Importation of Organochlorine Chemicals (Customs(Prohibited Imports) Regulations 1956, Schedule 9)

Not listed.

International regulations

Stockholm Convention

Not listed.

Rotterdam Convention

Not listed.

Kyoto Protocol

Not listed.

Montreal Protocol

Not listed.

Basel Convention

Not listed.

International Inventories

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Industrial Chemicals (AICIS)	Yes
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	Yes
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	Yes
Korea	Existing Chemicals List (ECL)	Yes
New Zealand	New Zealand Inventory	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes
Taiwan	Taiwan Chemical Substance Inventory (TCSI)	Yes
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

*A "Yes" indicates that all components of this product comply 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).

Section 16 - Any other relevant information

Issue date	01-February-2021
Revision date	09-June-2026
Key abbreviations or acronyms used	AICIS: Australian Inventory of Industrial Chemicals.
Disclaimer	All information in this 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.