

Safety Data Sheet
BUTANE
Legislation 1907/2006/EG

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND COMPANY/UNDERTAKING

1.1. Material Name	Butane
1.2. Recommended use / Restrictions of use	Heating Fuel
1.3. Supplier	Nefco Storage & Trading BV, BK Gas BV, OK Gas BV Regterweistraat 15 4181CE Waardenburg Telephone 0418 - 587 000 Email info@nefco.nl
1.4. Emergency Telephone Number	0418 – 587 000

2. HAZARDS IDENTIFICATION

GHS Classification

In accordance with 1272/2008/EG (CLP)
Hazard classes / Hazard categories Hazard indication:
Flammable gas, Category 1 H220
Pressurised gas H280

In accordance with 67/548/EEG or 1999/45/EG
Hazard characteristics R-sentence(s):
Highly flammable. R12

GHS Label elements
Symbol(s)

Labelling in accordance with 1272/2008/EG

Symbol/symbols:



Signal words:
Danger.

CLP Hazard classes:
PHYSICAL HAZARDS:
H220 Highly flammable gas.
H280 Contains pressurised gas; may explode when heated.

HEALTH HAZARDS:
According to GHS standards there is no risk to health.

ENVIRONMENTAL HAZARDS:
According to GHS standards there is no risk to the environment.

Safety Data Sheet
BUTANE
Legislation 1907/2006/EG

Classification, Labelling and Packaging (CLP)

PREVENTION:

P102 Keep out of reach of children.

P210 Keep away from heat/sparks/naked flames/hot surfaces
– no smoking.

P243 Take precautionary measures against static discharge.

RESPONSE:

P377 Do not attempt to extinguish fire caused by leaking gas,
unless the leak can be safely sealed off.

P381 Eliminate all sources of ignition if safe to do so.

STORAGE:

P403 Store in a well-ventilated space.

Labelling in accordance with 1999/45/E

EG hazard symbols:



EG Classification:

Highly flammable.

EG hazard sentences:

R12 Highly flammable.

EG safety recommendations:

S2 Keep out of reach of children.

S9 Store in a well-ventilated space.

S16 Keep away from sources of ignition. No smoking.

S33 Take precautionary measures against static discharge.

Safety Data Sheet
BUTANE
Legislation 1907/2006/EG

Other hazards which do not result in classification

HEALTH HAZARDS:

Inhalation of high vapour concentrations can cause weakening of the Central Nervous System (CNS), leading to dizziness, drowsiness, headache and nausea.

The available oxygen in the air can be depleted due to high gas concentrations. This may cause sudden loss of consciousness or death as a result of lack of oxygen.

Exposure to rapidly expanding gasses can cause freeze burns to eyes and/or skin.

SAFETY HAZARDS:

Vapours are heavier than air. Vapours may travel across the ground and reach remote ignition sources, causing a flashback fire danger. Electrostatic charges may be generated during pumping. Electrostatic discharge may cause fire.

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1. Chemical Identity Synonyms

CAS No. 106-97-8

3.2. Preparation (mixture)

A complex compound of hydrocarbons, obtained by distilling crude oil. It consists of hydrocarbons, mostly C3 to and including C7, with a boiling range of approx. -40°C to 0°C. May contain odorants (usually mercaptan). 1.3-butadiene, classified as a category 1 carcinogenic and as a category 2 mutagenic, may be present in concentrations of less than 0.1%.

3.4.

R12.

3.5.

Classification in accordance with 1272/2006/EG and 67/548/EG

Chemical name	Liquefied Petroleum Gas
CAS No.	106-97-8
EINECS	203-448-7
REACH registration No.	exception
Concentration	>= 80%
Symbol	F+
R-sentences	R12

Safety Data Sheet
BUTANE
Legislation 1907/2006/EG

4. FIRST AID MEASURES

Inhalation	Remove the victim to a location with fresh air. If the victim is conscious, keep the victim quiet and let him/her recover quietly. If the victim is breathing but unconscious, then place the victim in the recovery position. Call a doctor. If the victim is not breathing, call the emergency number 112 and immediately start artificial respiration.
Eye Contact	Remove contact lenses. Keep eyes open and rinse with ample water for a minimum of 15 minutes. Immediately refer to an eye specialist.
Skin Contact	For both symptoms of freezing and/or burning, rinse with ample water for at least 15 minutes. Do not remove clothing. Immediately call a doctor.
Ingestion	Swallowing is unlikely. If this does occur, ensure the victim drinks plenty water. Do not induce vomiting. Immediately call a doctor.
Other information	BUTANE depletes oxygen. Lack of oxygen in the first instance causes headache, dizziness and nausea. Longer periods without oxygen can lead to unconsciousness and even death.

5. FIRE FIGHTING MEASURES

Suitable Extinguishing Media	All known extinguishing media can be used.
Exposure Hazard	Carbon monoxide may be released with incomplete combustion.
Protective Equipment for Firefighters	Wear full protective clothing and self-contained breathing apparatus.
Specific Methods	If possible stop the escape of butane. Do not extinguish a butane fire unless absolutely necessary. Spontaneous, explosive re-ignition of the butane may occur. Extinguish all other fires in the vicinity of the butane fire which have been caused by the butane fire. Cool the butane holding (installation) elements with large amounts of water.
Specific risks	Exposure to fire and heat can cause butane holding (installation) elements (such as tanks, pipes and leads, pumps, etc.) to rip or explode.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

When working on or in the immediate vicinity of a butane installation, wear body-covering, fire resistant and anti-static clothing, including eye protection, protective gloves and protective footwear.

General precautions

Evacuate the vicinity immediately.
Remove all possible sources of ignition and prevent static discharge. Ensure adequate ventilation.
If possible, stop the butane escaping, if this can be achieved without wearing personal protective equipment. If this can only be done using protective equipment and you are not wearing such equipment, then do not attempt to stop the butane escape.
Prevent the butane from spreading to drains, wells, cellars or any (low-lying) location where accumulation may be hazardous.

Environmental precautions

Let liquid butane evaporate. Prevent the butane from spreading to drains, wells, cellars or any (low lying) location where accumulation may be hazardous. Ventilate the space and its vicinity for a prolonged period.

Methods and material for containment and clean up

Let liquid butane evaporate. Ventilate the space and its vicinity for a prolonged period. Rinse the installation's butane holding elements with inert gas if required.

7. HANDLING AND STORAGE

7.1. Precautions for safe handling

When handling butane, wear personal protective equipment, as described in chapter 8.

7.2. Conditions for safe storage

Only use the appropriate, specifically designed, approved and correctly labelled pressurised equipment. Ensure that the pressurised equipment is stored in a well-ventilated area, away from ignition sources and other heat sources.

7.3. Specific use

Butane is only liquid under pressure. For this reason, only store in specifically designed, approved and correctly labelled pressurised equipment. At ambient temperature and normal air pressure, butane is a gas. However as a gas, butane is heavier than air.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Threshold value for exposure

MAC value 600 ppm or 1.430 mg/m³

8.2. Individual protection measures

The following personal protective equipment is required to be worn when working on or in the immediate vicinity of a butane installation or when storing or handling butane:

Body-covering, fire resistant, anti-static clothing 

Eye protection 

Protective footwear 

Protective gloves 

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1. Appearance and colour

Clear liquid (in storage under pressure). Colourless gas at ambient temperature in an open space.

Odour

Characteristic, sweet odour when supplied with odorant. Odourless when not supplied with odorant.

9.2. Boiling point

Ca. 0 °C

Melting point

Ca. -138 °C

Flash point

Ca. -60 °C

Auto-ignition temperature

Ca. 360 °C

Relative Density, gas (air=1)

Ca. 2

Relative Density, liquid (water=1)

Ca. 0.6

Vapour pressure at 15°C

Ca. 0.7 bar

Explosion limits

Ca. 9.5 full % in air

Water solubility

Poorly soluble/insoluble

10. STABILITY AND REACTIVITY

Chemical stability and reactivity

Butane is a stable and non-self-reacting product.

10.1. Conditions to avoid

Ignition and heat sources.

10.2. Incompatible materials

Oxygen and oxidising agents.

10.3. Decomposition products

No hazardous decomposition products will form under normal storage conditions.

11. TOXICOLOGICAL INFORMATION

Basis for Assessment	This information is based on the toxicological information of butane's compounds.
Respiratory irritation	Non-irritating in gas form, however may cause symptoms of freezing.
Eye damage/irritation	Non-irritating in gas form. It may however (both in liquid and in gas form) cause symptoms of freezing.
Skin corrosion/irritation	Non-irritating in gas form. It may however (both in liquid and in gas form) cause symptoms of freezing.
Inhalation	In the first instance will cause headache, dizziness and nausea. Prolonged exposure can lead to unconsciousness and even death.
Swallowing	Swallowing is unlikely. It may cause symptoms of freezing.

12. ECOLOGICAL INFORMATION

Basis for Assessment	This information is based on the ecological information of butane's compounds.
12.1. Eco toxicity	Butane evaporates rapidly and as such is relatively non-hazardous to soil and water.
12.2. Mobility	Due to its high volatility, the air is the only environment where butane can be found.
12.3. Persistence/degradability	Butane is probably easily biodegradable, however it will only remain liquid for a very short time and evaporate rapidly.
12.4. Bioaccumulative potential	No data is available on bioaccumulation. Bioaccumulation is thought to be unlikely.
12.5. PBT and vPvB	Butane does not meet the criteria for identifying persistent bioaccumulative and toxic substances (PBT substances) and very persistent and very bioaccumulative substances (vPvB-substances). For this reason it is considered to be no PBT or no vPvB.

13. DISPOSAL CONSIDERATIONS

General	Preferably, use up the butane. If not, flare the unused butane using a suitable burner with flame extinguisher at an appropriate location, or let it escape in an area where the risk of ignition is easily manageable. Proceed as under handling in chapter 7.
Empty containers	Pressurised equipment has to be empty when transported. When transporting empty pressurised equipment, the transport document is required to read "empty container, last load: UN 1965, hydrocarbon gas mixture, liquefied, nos, 2.1, (C/D)"

14. TRANSPORT INFORMATION

Road transport (ADR)/rail transport (RID)/inland waterway transport (AD)

UN No.	1965
Proper shipping name and description	Mixture of hydrocarbon gasses, liquefied, nos (butane)
Class	2
Classification code	2F
Hazard identification number	23
Transport category (tunnel code)	2 (B/D)
ADR Labelling	



Additional transport information	Ensure that the driver/operator is familiar with the possible hazards of the load and knows how to act in the event of an accident or emergency. Prior to transporting empty pressurised equipment, ensure that such equipment is well secured.
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15. REGULATORY INFORMATION

EG classification	F+;R12
Symbols	F+: highly flammable
Risk sentences	R12 highly flammable
Safety sentences	S9 Store in a well-ventilated place. S16 Keep away from sources of ignition. No smoking.

16. OTHER INFORMATION

Ensure that all national and local regulations are adhered to.

Ensure that the fire hazard is known.

The risk of asphyxiation is often not recognised and therefore requires the appropriate attention when giving instructions and during training.

For the use of this substance in a new process or experiment, careful research is required into the safety and the suitability of the material.

This data sheet has been composed with the greatest of care and due diligence. However, the owner accepts no liability for damages of whatever nature that may occur from using the data contained in this sheet. This safety data sheet has been set out in accordance with the current European Directives and is applicable in all countries which have included these directives in their own domestic legislation.