


SAFETY DATA SHEET

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

1.1 Product identifier	
Product Name:	BUTANE
Product Description:	V8000a-BUTANE-BUTANE
Trade name:	BUTANE
Product Code:	BUT
CAS No.:	106-97-8
EC No.:	203-448-7
1.2 Relevant identified uses of the substance or mixture and uses advised against	
Identified use(s):	Fuel for engines. Blend component.
1.3 Details of the supplier of the safety data sheet	
Company Identification:	Vitol SA Boulevard du Pont d'Arve 28 P.O. Box 384 1211 Geneva 4 Switzerland
Telephone:	+31 10 498 7200
Fax:	+31 10 452 9545
E-Mail (competent person):	xreach@vitol.com
1.4 Emergency telephone number	
Emergency Phone No. (24 h):	+44 (0) 1235 239 670 (24 hours, 7 days)

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture	<p><u>According to Regulation (EC) No. 1272/2008 (CLP)</u></p> <p>Flam. Gas 1; H220 Muta. 1B; H340 Carc. 1A; H350 Gases under pressure; H280</p> <p><u>According to Directive 67/548/EEC & Directive 1999/45/EC</u></p> <p>F+; R12 Carc. Cat. 1; R45 Muta. Cat. 2; R46</p>
2.2.1 Label elements	<p><u>According to Regulation (EC) No. 1272/2008 (CLP)</u></p> <p>Hazard pictogram(s):</p> <div style="text-align: center;">  </div> <p>Signal word(s):</p> <p>Danger</p> <p>Hazard statement(s):</p> <p>H220: Extremely flammable gas. H280: Contains gas under pressure; may explode if heated. H340: May cause genetic defects. H350: May cause cancer.</p>

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Precautionary statement(s):

P202: Do not handle until all safety precautions have been read and understood.
 P210: Keep away from heat, sparks, open flame, hot surfaces - No smoking.
 P243: Take precautionary measures against static discharge.
 P281: Use personal protective equipment as required.
 P308 + P313: If exposed or concerned: Get medical advice/attention.
 P410 + P403: Protect from sunlight. Store in a well-ventilated place.

2.2.2 Label elements

Hazard pictogram(s):



Hazard Symbol:

Extremely flammable. Toxic.

Risk Phrases:

R12: Extremely flammable.
 R45: May cause cancer.
 R46: May cause heritable genetic damage.

Safety Phrases:

S9: Keep container in a well-ventilated place.
 S16: Keep away from sources of ignition - No smoking.
 S33: Take precautionary measures against static discharges.
 S45: In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).
 S53: Avoid exposure - obtain special instructions before use.

2.3 Other hazards

Vapour may create explosive atmosphere. The vapour is heavier than air; beware of pits and confined spaces. The vapour may have narcotic effect. Frostbite (cold burn)

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

EC Classification No. 1272/2008

Hazardous ingredient(s)	%W/W	CAS No.	EC No.	Hazard symbol(s) and hazard statement(s)
Butane	100	106-97-8	203-448-7	Flam. Gas 1; H220 Muta. 1B; H340 Carc. 1A; H350 H280

EC Classification No. 67/548/EC

Hazardous ingredient(s)	%W/W	CAS No.	EC No.	Risk Phrases and Safety Phrases
Butane	100	106-97-8	203-448-7	F+; R12 Carc. Cat. 1; R45 Muta. Cat. 2; R46

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4. FIRST AID MEASURES

4.1 Description of first aid measures	
Inhalation:	Remove patient from exposure, keep warm and at rest. If symptoms persist, obtain medical attention.
Skin Contact:	Remove contaminated clothing immediately and drench affected skin with plenty of water, then wash with soap and water. Contaminated clothing should be thoroughly cleaned. If symptoms persist, obtain medical attention.
Eye Contact:	If substance has got into the eyes, immediately wash out with plenty of water for at least 15 minutes. If symptoms persist, obtain medical attention.
Ingestion:	Do not induce vomiting. Provided the patient is conscious, wash out mouth with water and give 200-300 ml (half a pint) of water to drink. If symptoms persist, obtain medical attention.
4.2 Most important symptoms and effects, both acute and delayed	The vapour may have narcotic effect. Frostbite (cold burn)
4.3 Indication of the immediate medical attention and special treatment needed	If breathing is laboured, oxygen should be administered by qualified personnel. In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

5. FIRE-FIGHTING MEASURES

5.1 Extinguishing media	
Suitable Extinguishing Media:	Foam, CO2 or dry powder.
Unsuitable Extinguishing Media:	For large fire use: Water. Do not use water jet.
5.2 Special hazards arising from the substance or mixture	Vapour may create explosive atmosphere. The vapour is heavier than air; beware of pits and confined spaces. May give off toxic fumes in a fire. Carbon monoxide, Carbon dioxide.
5.3 Advice for fire-fighters	A self contained breathing apparatus and suitable protective clothing should be worn in fire conditions. Keep fire exposed containers cool by spraying with water. Flash Point (°C): <-20 Flammable Limits (Lower) (%v/v): 1.9 Flammable Limits (Upper) (%v/v): 15 Auto Ignition Temperature (°C): 410-550

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures	Eliminate sources of ignition. Vapour may create explosive atmosphere. The vapour is heavier than air; beware of pits and confined spaces. Ensure adequate ventilation. Use non-sparking hand tools and explosion proof electrical equipment. Take precautionary measures against static discharges. Avoid inhalation of vapours. Avoid contact with skin and eyes. Wear suitable protective clothing and gloves. (See Section: 8).
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	Contaminated clothing should be thoroughly cleaned.
6.2 Environmental precautions	Do not allow to enter drains, sewers or watercourses. Spillages or uncontrolled discharges into watercourses must be alerted to the Environment Agency or other appropriate regulatory body.
6.3 Methods and material for containment and cleaning up	Adsorb spillages onto sand, earth or any suitable adsorbent material. Sweep up carefully with non-sparking tools. Transfer to a container for disposal. Wash spill area with soapy water. Contaminated adsorbent must be removed in sealed, plastic lined drums and disposed of via an authorised waste disposal contractor.
6.4 Reference to other sections	Personal Protection: See Section: 8.
Other advice	Small spillages: May evaporate quickly.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling	Eliminate sources of ignition. Vapour may create explosive atmosphere. The vapour is heavier than air; beware of pits and confined spaces. Provide adequate ventilation, including appropriate local extraction, to ensure that the occupational exposure limit is not exceeded. Use non-sparking hand tools and explosion proof electrical equipment. Take precautionary measures against static discharges. Avoid inhalation of vapours. Avoid contact with skin and eyes. Wear suitable protective clothing and gloves. (See Section: 8). Do not eat, drink or smoke at the work place. Wash hands and exposed skin after use. Contaminated clothing should be thoroughly cleaned.
7.2 Conditions for safe storage, including any incompatibilities	Keep away from heat and sources of ignition. Keep from direct sunlight. Keep only in the original container in a cool, well-ventilated place. Keep/store away from: Oxidising agents.
7.3 Specific end use(s)	Industrial use only.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters	No Occupational Exposure Limit assigned.
8.2 Exposure controls	
8.2.1 Appropriate engineering controls	Provide adequate ventilation, including appropriate local extraction, to ensure that the occupational exposure limit is not exceeded.
8.2.2 Personal Protection	
Eye/face protection	Goggles giving complete protection to eyes. (EN 166)
	
Skin protection	Protective gloves. (EN 374)

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Respiratory protection

In case of insufficient ventilation, wear suitable respiratory equipment. (BS EN 14387:2004+A1)



Other:

Apron or other light protective clothing, boots and plastic or rubber gloves.

8.2.3 Environmental Exposure Controls

Avoid release to the environment.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Appearance:	Liquefied gas.
Colour:	Colourless.
Odour:	Odourless.
Boiling Point (°C):	-2
Melting Point (°C):	-159.6
Flash Point (°C):	<-20
Flammable Limits (Lower) (%v/v):	1.9
Flammable Limits (Upper) (%v/v):	15
Vapour Pressure (Pascal):	>210,000 (@ 20°C)
Specific Gravity:	0.557(@ 0°C)
Solubility (Water):	0.054 g/l (@ 20°C)
Partition Coefficient: (n-Octanol/water)	log Pow: 2.36-2.9
Auto Ignition Temperature (°C):	410-550
Explosive Properties:	Vapour may create explosive atmosphere.
Oxidising Properties:	Not oxidising.
Vapour Density (Air=1):	2.007

9.2 Other information

No information available.

10. STABILITY AND REACTIVITY

10.1 Reactivity	No information available.
10.2 Chemical stability	Stable under normal conditions.
10.3 Possibility of hazardous reactions	No information available.
10.4 Conditions to avoid	Keep away from heat, sources of ignition and direct sunlight.
10.5 Incompatible materials	Oxidising agents.
10.6 Hazardous Decomposition Product(s)	May give off toxic fumes in a fire. Carbon monoxide, Carbon dioxide.

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity:

Ingestion:	No information available.
Inhalation:	LC ₅₀ (inhalation/rat): 570,000 ppm/15 minutes.
Skin Contact:	No information available.
Eye Contact:	No information available.

Skin corrosion/irritation

Frostbite (cold burn)

Serious eye damage/irritation:

Frostbite (cold burn)

Respiratory or skin sensitization:

Negative.

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Mutagenicity:	May cause heritable genetic damage.
Carcinogenicity:	May cause cancer.
Reproductive toxicity:	Negative.
STOT-single exposure:	The vapour may have narcotic effect.
STOT-repeated exposure:	Negative.
Aspiration hazard:	Negative.
Other information:	No information available.

12. ECOLOGICAL INFORMATION

12.1 Toxicity	LC ₅₀ (Fish): > 1000 mg/l/96h Bioconcentration factor (BCF) : 1.57-1.97 WGK: Not determined.
12.2 Persistence and degradability	Inherently biodegradable. May evaporate quickly.
12.3 Bioaccumulative potential	The product has low potential for bioaccumulation.
12.4 Mobility in soil	The product has low mobility in soil.
12.5 Results of PBT and vPvB assessment	Inherently biodegradable.
12.6 Other adverse effects	No information available.

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods	Do not empty into drains; dispose of this material and its container in a safe way. To be disposed of as hazardous waste. Disposal should be in accordance with local, state or national legislation.
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14. TRANSPORT INFORMATION

14.1 UN number	1011
14.2 Proper Shipping Name	BUTANE
14.3 Transport hazard class(es)	2
14.4 Packing Group	-
14.5 Environmental hazards	Not classified as a Marine Pollutant.
14.6 Special precautions for user	Vapour may create explosive atmosphere. The vapour is heavier than air; beware of pits and confined spaces.
14.7 Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code	-

15. REGULATORY INFORMATION

According to Regulation (EC) No. 1272/2008 (CLP)

Hazard pictogram(s):



Signal word(s):

Danger

Hazard statement(s):

H220: Extremely flammable gas.
H280: Contains gas under pressure; may explode if heated.
H340: May cause genetic defects.
H350: May cause cancer.

Precautionary statement(s):

P202: Do not handle until all safety precautions have been read and understood.
P210: Keep away from heat, sparks, open flame, hot surfaces -

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No smoking.
 P243: Take precautionary measures against static discharge.
 P281: Use personal protective equipment as required.
 P308 + P313: If exposed or concerned: Get medical advice/attention.
 P410 + P403: Protect from sunlight. Store in a well-ventilated place.

According to Directive 67/548/EEC & Directive 1999/45/EC

Hazard pictogram(s):



Hazard Symbol:

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Risk Phrases:

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 S53: Avoid exposure - obtain special instructions before use.

16. OTHER INFORMATION

Full text of Hazard statements and Risk phrases for pure substances listed in section 3.

Hazard Symbol:

H220: Extremely flammable gas.
 H280: Contains gas under pressure; may explode if heated.
 H340: May cause genetic defects.
 H350: May cause cancer.

Risk Phrases:

R12: Extremely flammable.
 R45: May cause cancer.
 R46: May cause heritable genetic damage.

The following sections contain revisions or new statements: 1-16.

Abbreviations:

CAS = Chemical Abstracts Service;
 CNS = Central Nervous System;
 EINECS = European Inventory of Existing Commercial Chemical Substances;
 EC50 = Effective Concentration 50%;
 IARC = International Agency for Research on Cancer;
 IC50 = Inhibitory Concentration 50%;
 LC50 = Lethal Concentration 50%;
 LD50 = Lethal Dose 50%;
 LTEL = Long Term Exposure Limit;
 STEL = Short Term Exposure Limit;
 TWA = Time Weighted Average;
 EH40 = UK Occupational Exposure Limits
 VLA-ED = Exposure limit value- Daily exposure (Valor Límite Ambiental-Exposición Diaria)
 VLB = Biological Limit Values (Valores Límite Biológicos)
 VLI= Indicative limit values

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References:

Human Toxicology. Vol. 1, Pg. 239, 1982.

RTECS (www.ccinforweb2.ccohs.ca/rtecs)

IUCLID Dataset: Isobutane (19/02/2000) (<http://ecb.jrc.ec.europa.eu>)

Disclaimer:

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