



SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier	
Trade name	Butane
1.2. Relevant identified uses of the substance or mixture and uses advised against	
Relevant identified uses	Industrial and professional. Perform risk assessment prior to use. Use as a fuel.
1.3 Company details	
Company Name	SYC Cylinders Europe S,A.
Telephone	(+34) 933363617

SECTION 2: Hazards identification

2.2. Label elements - Labelling Regulation EC : 1272/2008 (CLP)	
Hazard pictograms	 <p>GHS04 (Only bulk distribution)</p>  <p>GHS02</p>
Hazard statements	<p>H220: Extremely flammable gas. H280: Contains gas under pressure; may explode if heated. (Only bulk distribution).</p>
Precautionary statements	<ul style="list-style-type: none"> • Prevention <ul style="list-style-type: none"> ○ P102: Keep out of the reach of children. ○ P210: Keep away from heat/sparks/open flames/hot surfaces. — No smoking. • Response <ul style="list-style-type: none"> ○ P377: Leaking gas fire: Do not extinguish, unless leak can be stopped safely. ○ P381: Eliminate all ignition sources if safe to do so. • Storage <ul style="list-style-type: none"> ○ P410+P403: Protect from sunlight. Store in a well-ventilated place.
Other hazards	Asphyxiant in high concentrations.

SECTION 3: Composition/information on ingredients

3.1. Substance / Mixture	
Substance name	Butane
CAS N°	68512-91-4
EC N°	270-990-9
Index N°	649-083-00-0

SECTION 4: First aid measures

4.1. Description of first aid measures

General information

- **Inhalation:** Move the affected person to fresh air. In high concentrations may cause asphyxiation. Symptoms may include loss of mobility/consciousness. Victim may not be aware of asphyxiation. Remove victim to uncontaminated area wearing self contained breathing apparatus. Keep victim warm and rested. Call a doctor. Apply artificial respiration if breathing stopped.
- **Skin contact:** Contact with evaporating liquid may cause frostbite or freezing of skin, Flush affected areas with plenty of water to defrost and remove contaminated clothing, if the cloth is not against to the skin flush with plenty of water. Do not rub affected areas. Call for medical help immediately.
- **Eye contact:** Do not rub affected areas. In case of eye contact: wash with plenty of water for 15 minutes. Call immediately for emergency medical assistance.
- **Ingestion:** Ingestion is not considered a potential route of exposure.

4.2. Most important symptoms and effects, both acute and delayed

Most important symptoms and effects, both acute and delayed

- **Inhalation:** High concentrations in the air, has narcotic and asphyxiation properties as a result of lack of oxygen available for the breathing. May cause unwanted side effects on central nervous system. Side effects may include Los efectos pueden incluir excitación, excitación, headache, dizziness, drowsiness, blurred vision, fatigue, tremors, seizures, loss of consciousness and respiratory failure. Concentrations greater than 10% may cause heart irregularities.
- **Ingestion/aspiration** The product is at room temperature and ambient pressure on gas phase and there is no danger to ingestion or aspiration.
- **Skin contact:** The liquefied product may cause frostbite in contact with the skin.
- **Eye contact:** The liquefied product may cause frostbite in contact with the eyes.

4.3. Indication of any immediate medical attention and special treatment needed

General information

Obtain medical assistance.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media	Water spray or fog. Dry powder.
Unsuitable extinguishing media	None.

5.2. Special hazards arising from the substance or mixture

Combustion products

CO₂, H₂O & CO (In the absence of oxygen).

Specific methods

Do not extinguish, unless leak can be stopped safely. Move containers from fire area if possible without risk. Apply cooling water to sides of containers exposed to flames until well after fire is out. Stay away from the containers. For massive fire in cargo area, use unmanned hose holder or monitor nozzles to avoid risks. If the fire is impossible to control, withdraw from area and let fire burn. Consult and follow existing emergency standard procedures.

Special protective equipment for fire fighters

Extremely flammable gas. May be ignited by heat, sparks, static electricity or flames. Vapor is heavier than air, may be moved into large distances until sources of ignition. The containers without safety valves may explode under exposure to high temperatures. The receptacles half-full and empty, present the same risks as full container. Do not use in enclosed areas, outdoor or ducts because can cause risk vapour explosion. There are particularly dangerous to dumping into the sewage network.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General information

Personal precautions: Keep unnecessary people away; isolate area and deny entry. Stay away from confined or depressed spaces which can be stored flammable and asphyxiating vapours.

Personal protection: Self-contained breathing apparatus in presence of high concentrations of gas.

Waterproof gloves and other protective cloth non-degradable, if it possible has contact with the product.

6.2. Environmental precautions

General information

The liquified product discharged into water or soil suffers flash-gas until they get totally in phase gas, it does not involve water or land pollution.

6.3. Methods and material for containment and cleaning up

General information

The gaseous phase of the spilled material will evaporate quickly, emitting flammable and asphyxiating vapours.

Eliminate all sources of ignition from areas where the dust product is handled or used; no sparks, no smoking or flames in hazard area.

Stop leak if without risk.

Use soap scum to detect small leaks. Never search for leaks in the presence of flames.

Use water spray to reduce vapors.

6.3. Reference to other sections

General information

See also sections 8 and 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

General safety precautions

- Use proper protective clothing to avoid product contact and respiratory protection if exists possibility of gas inhalation.
- Keep away from possible ignition sources.
- No welding or cutting near of the containers.
- Take measures against the accumulation of electrostatic charges, equipment and pipelines must be properly grounded.

Specific conditions

- In closed areas use cooling system efficiently such a fixed or enforced (consult current regulations).
- Always use non sparking tools and work equipment.
- To fill up and use of cistern tanks of liquified gas, you must to use gloves, suit and shoes antistatic; it would be advisable on these operations wear safety glasses and a breathing mask to prevent damages.
- The cleaning and maintenance of recipients may be carried out only by qualified, authorised and trained personnel, consistent with the locally applicable standards and taking into consideration the safety guidelines and measures (it's therefore important to ensure that the recipients are empty and are exempt of fumes before carrying out any form of inspection whereby should be effected by specialised personnel).

7.2. Conditions for safe storage, including any incompatibilities

Hazardous reactions

Highly inflammable and fuel product.
The liquid has a strong tendency to storage static electricity when it's transported in pipelines, it's a vital to loading and unloading operations to provide to the pipelines as well as transport containers and the proper ground connections.

Storage conditions

Use containers non-degradable by the product, suitably sealed and identified willing to right places.
Store preferably in outdoor and indoor ready for the warehouse of flammable gases.
Protect from physical harm and fire.
In areas where it is possible to storage of LPG is contemplated under the current legislation, firefighting systems must be installed by required normative.
Gas detectors are recommended to use.

Incompatible materials

Oxidising substances.

7.3. Specific end use(s)

General information

See section 2.2

SECTION 8: Exposure controls/personal protection

8.1. Exposure controls

Appropriate engineering controls

Avoid contact with the product liquified and gas inhalation. Quickly wash the contaminated clothing of liquified gas to avoid irritations and risk of ignition, and it has to be removed if it's not stucked on the skin.

Control parameters

They are low detectable by smell in the air, when they are not odorized.

Butane

TLV/TWA (ACGIH), VLA/ED (INSHT): 1000 ppm

REL/TWA (NIOSH): 800 ppm

MAK: 1000 ppm

UK: OEL-TWA (COSHH): 600ppm (1450mg/m³)

OEL-STEL: 750ppm (1810mg/m³)

Propane

TLV/TWA (ACGIH), VLA/ED (INSHT): 1000 ppm

REL/TWA (NIOSH): 1000 ppm

PEL/TWA (OSHA): 1000 ppm

MAK: 1000 ppm

IDLH (Level considered dangerous to the health and the life): 2100 ppm.

Individual protection measures, e.g. personal protective equipment

A risk assessment should be conducted and documented in each work area to assess the risks related to the use of the product and to select the PPE that matches the relevant risk. The following recommendations should be considered: PPE compliant to the recommended EN/ISO standards should be selected.

- Eye/face protection
 - Wear safety glasses with side shields. **Standard EN 166 - Personal eye-protection.**
- Skin protection
 - Hand protection: Wear working gloves when handling gas containers. **Standard EN 388 - Protective gloves** against mechanical risk.
 - Others: Wear safety shoes while handling containers. **Standard EN ISO 20345 - Personal protective equipment** - Safety footwear.
- Respiratory protection: Self contained breathing apparatus (SCBA) or positive pressure airline with mask are to be used in oxygen-deficient atmospheres. **Standard EN 137 - Self-contained open-circuit compressed air breathing apparatus with full face mask.**
- Environmental exposure controls: Refer to local regulations for restriction of emissions to the atmosphere. See section 13 for specific methods for waste gas treatment.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

General information

- Appearance: Liquified gas.
- Colour: Colourless.
- Odour: characteristic, strengthening by sulphurous derivative.
- Odour threshold: Not applicable.
- PH value: 6,0 - 8,0
- Melting point / Freezing point: Not applicable.
- Initial boiling point/boiling range : (-47.93 °C) - (-25.40 °C)
- Flash point: (-107.5 °C) - (-101.6 °C)
- Evaporation rate: Not applicable.
- Flammability (solid, gas): extremely flammable.
- Lower explosion level: 2.37% - Greater explosion level: 9.5%
- Vapour pressure: 10 - 16 kg/cm² to 37.8 °C
- Relative density, vapour: 1.5 (aire: 1) a 0 °C
- Density: 0.502 g/cm³ min. to 15 °C (ASTM D1657)

General information

- Water solubility: in organic solvents.
- Partition coefficient n-octanol/water: log Kow: 2.36
- Auto-ignition temperature: > 400 °C
- High decomposition temperature, viscosity, explosive properties, oxidising properties: Not applicable.

9.2 Additional information

General information

- Surface tension: 16 dyne/cm to -47 °C
- Other data: gross calorific value (PROPANE): 11900 Kcal/kg
- Water solubility: 0.0047% vol/vol.

SECTION 10: Stability and reactivity

10.1. Reactivity

General information

Undisclosed.

10.2. Chemical stability

General information

Extremely flammable and flammable fuel

10.3. Possibility of hazardous reactions

General information

Strong oxidizing substances

10.4. Conditions to avoid

General information

Exposure to flame, sparks, heat sources and static electricity.

10.5. Incompatible materials

General information

Undisclosed.

10.6. Hazardous decomposition products

General information

CO (in the event of incomplete combustion), CO₂, H₂O.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Toxicity

The toxicological information is provided on the sections VII to XI of regulation of 1907/2006 (REACH).

The product categorisation is correlated with the comparison of the results of toxicological studies carried out with the criteria listed in recital of Regulation (EC) No 1272/2008 to determine the CMR effect, categories 1A and 1B.

SECTION 12: Ecological information

12.1. Toxicity

General information

No ecological damage caused by this product.

12.2. Persistence and degradability

General information

The product is already on gas phase air in air at room temperature. It is not expected that the photolysis, hydrolysis or bioconcentration of the product which represents a significant environmental distribution. The biodegradation of the product can happen on soil and water, however, the volatilization is the most important process. The evaporation half-life of the compound on inland waters was estimated at 2.2 hr (rivers) and 2.6 days (lakes). The reactions with hydroxyl (OH) radicals (6 days half-life) and the nocturnal chemical reactions with free-radical reaction species and nitrogen oxides, it can contribute to atmospheric transformation of the product.

12.3. Bioaccumulation potential

General information

The bioconcentration factor (BCF) for the product has been estimated on the range from 1,78 to 1,97 indicating that the bioconcentration in aquatic organisms is not important.

12.4. Soil mobility

General information

The product is provided for a mobility in soil from lower to medium. The bioconcentration factor (BCF) for the product has been estimated on the range from 1,78 to 1,97 indicating that the bioconcentration in aquatic organisms is not important.

12.5. Results of PBT and vPvB assessment

General information

Not classified as PBT or vPvB.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

General information

- **Elimination:** Given the highly volatile nature of the product, and the purpose for which goods are normally used, there no exists LPG surplus. The final destiny of them is the combustion or the dispersion to the atmosphere when it's used how aerosol propellants.
- **Manipulation:** not applied.
- **Disposals:** The establishment and undertaking which dispose of recover, disposal, collect or waste transport have to comply with the provisions of the directive 2008/98/EC on waste or other local, national or community provisions.

SECTION 14: Transport information

14.1. Transport information

UN number

UN 1965

Transport hazard class(es)



2.1: Flammable gases

Environmental hazards	None.
14.2. Special precautions for user	
General information	Labelling: Highly flammable. Prohibited on passenger air transport and limited on passenger ships. It doesn't have any categorie assigned for the IBC code.

SECTION 15: Regulatory information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

Chemical safety assessment	<p>EU-REGULATION N o 453/2010: REQUIREMENTS FOR THE DEVELOPMENT OF SAFETY DATA SHEETS Globally Harmonized Classification and Labelling System for Chemical Substances (GHS). Regulation (EC) No 1272/2008 of the European Parliament and of the Council, of 16 December 2008 on classification, labelling and chemicals (REACH). Dir. 67/548/CEE about classification, labelling and packaging of dangerous substances (including amendments and adaptations in force). Dir. 1999/45/CE about classification, labelling and packaging of dangerous substances (including amendments and adaptations in force). Dir. 91/689/CEE of hazardous waste / Dir.2008/98/CE of waste management. Dir. 2002/72/EC about plastic materials and articles intended to come into contact with foodstuffs. Royal Decree 363/95:The regulation about new substances notificacions and clasification, pakaging and hazardous labelling substances. Royal Decree 255/2003: The regulation about clasification, pakaging and hazardous labelling substances. Royal Decree 2207/94 about substances used to the plastic fabrication intended to come into contact with foodstuffs. European Agreement concerning the international carriage of dangerous goods by road (ADR). The Regulation concerning the International Carriage of Dangerous Goods by Rail (RID). Regulations of the International Civil Aviation Organization (ICAO) and the International Air Transport Association (IATA) regulation pertaining to air shipment. International Maritime Dangerous Goods (IMDG) Code. Regulations of the International Air Transport Association (IATA) regulation pertaining to air shipment. International code of chemical substances in bulk (IBC code) MARPOL 73/78 Convention.</p>
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SECTION 16: Other information

Other warnings	<p>Before the product is operated in a new process or experiment, should be held a full security study and compatibility of the materials. The details given are certain and correct in the time of carry is this document to print. While during the preparation of this document is has taken special care, not is accepts no responsibility for them injury them damage resulting.</p>
Responsibilities	<p>The base of available information at the time of going to press and cover the most common applications, without guaranteeing that its content is sufficient in all cases and situations.</p>