

# SAFETY DATA SHEET

**Product:** BUTANO ESPECIAL

Revision: 01

Date: 06/13/2024

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## 1 - IDENTIFICATION

GHS Product identifier:	BUTANO ESPECIAL
Other means of identification:	BUT616
Recommended use of the chemical:	Used in residential natural gas, cooking gas, and industrial natural gas.
Specific restrictions on use:	There are not known restrictions on use.
Supplier`s details:	<p>Acelen</p> <p><b>Address:</b> ROD BA 523, KM 4, MATARIPE, CEP: 43900-000 - BA - Brasil.</p> <p><b>Phone number:</b> (71) 3511-8000 / (11) 5225-8900</p>
Emergency phone number:	EMERGENCIall: 0800 729 2756 / (11) 94759-7282 (Whatsapp) (24h)

## 2 - HAZARD IDENTIFICATION

Classification of the substance or mixture:	<p>Flammable gases - Category 1A;</p> <p>Gases Under Pressure - Liquefied;</p> <p>Acute Toxicity - Inhalation - Category 4.</p>
Classification system adopted:	Globally Harmonized System of Classification and Labeling of Chemicals (GHS), United Nations.

### GHS label elements, including precautionary statements

Pictograms:



Signal word:	DANGER
Hazard statement(s):	<p>H220 Extremely flammable gas.</p> <p>H280 Contains gas under pressure; may explode if heated.</p> <p>H332 Harmful if inhaled.</p>
Precautionary statement(s):	<p><b>PREVENTION:</b></p> <p>P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.</p> <p>P222 Do not allow contact with air.</p> <p>P261 Avoid breathing dust/fume/gas/mist/vapours/spray.</p> <p>P271 Use only outdoors or in a well-ventilated area.</p> <p>P280 Wear protective gloves, protective clothing, eye protection, face protection and hearing protection.</p> <p><b>RESPONSE TO EMERGENCY:</b></p> <p>P304 + P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.</p> <p>P317 Get medical help.</p> <p>P377 Leaking gas fire: Do not extinguish, unless leak can be stopped safely.</p> <p>P381 In case of leakage, eliminate all ignition sources.</p> <p><b>STORAGE:</b></p> <p>P403 Store in a well-ventilated place.</p>

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	P410 + P403 Protect from sunlight. Store in a well-ventilated place.
Other hazards which do not result in classification:	It is a simple asphyxiant and, in high concentrations, causes asphyxiation by reducing the concentration of oxygen in the environment. Simple asphyxiant. Forms explosive mixtures in contact with air.

### 3 - COMPOSITION/INFORMATION ON INGREDIENTS

SUBSTANCE	
Common chemical name:	Hydrocarbons, C4 Petroleum gas.
Common name(s), synonym(s) of the substance:	C4 aliphatic hydrocarbon (mixture of isomers, n-butane and isobutane);
CAS:	87741-01-3
Impurities and stabilizing additives which are themselves classified and which contribute to the classification of the substance:	Does not contain components that contribute to the hazard.

### 4 - FIRST-AID MEASURES

#### Description of necessary first-aid measures

Inhalation:	Gases may cause dizziness and asphyxia. Remove victim to fresh air and keep at rest in a position comfortable for breathing. Monitor respiratory function. If the victim shows difficulty breathing, then give oxygen. If necessary, apply artificial respiration. Consult a doctor. Bring this SDS.
Skin:	In case of contact of the product in pressurized form with the skin, it can cause injury or frostbite (frostbite). Wash exposed skin immediately with sufficient amount of water. Clothing adhered to the skin should be thawed in warm water before being removed. Consult a doctor. Bring this SDS.
Eye:	In case of contact of the product in pressurized form with eyes, may occur injury or frostbite. Wash the eyes with sufficient amount of water immediately, keeping the eyes opened. In case of use of contact lenses, remove them, if possible. Keep washing. Contact a doctor. Bring this SDS.
Ingestion:	Not applicable.
Most important symptoms/effects, acute and delayed:	Harmful if inhaled. It is a simple asphyxiant and, in high concentrations, causes asphyxiation by reducing the concentration of oxygen in the environment.
Indication of immediate medical attention and special treatment needed, if necessary:	Avoid contact with the product to help the victim. Keep victim warm and quiet. Symptomatic treatment should comprise mainly supportive measures such as correction of electrolyte disturbances, metabolic, and respiratory support. In case of skin contact do not rub the affected area.

### 5 - FIRE-FIGHTING MEASURES

Extinguishing media:	Appropriate: carbon dioxide (CO <sub>2</sub> ), water mist and powder. Inappropriate: water jet directly.
Specific hazards arising from the chemical:	Combustion of chemical may generate anesthetic fumes, carbon monoxide and carbon dioxide. Risk of explosion if ignited in an enclosed area. Spontaneously explosive in chlorinated sunlight. Forms explosive mixture with air and oxidizing agents Extremely flammable gas.

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Gases can be denser than air and can collect in low or confined areas such as storm drains and basements. Containers can explode if heated.

**Special protective actions for fire-fighters:** Self-contained breathing apparatus (SCBA) with positive pressure and full protective clothing. Keep away from tanks. Fight the fire from as far away as possible or monitor the nozzles. If possible, fight the fire downwind. Do not extinguish fire before leak is contained. For large fires, use hose holders or monitor nozzles if it is impossible to leave the area. Cool containers with large amounts of water until fire is out. Remove containers from fire area if possible without additional risk.

### 6 - ACCIDENTAL RELEASE MEASURES

#### Personal precautions, protective equipment and emergency procedures

**For non-emergency personnel:** Prevent sparks or flames. Do not smoke. Do not touch damaged containers or spilled material without the use of appropriate clothing. Avoid exposure to the product. Stay in a safe place, with wind from behind. Use personal protective equipment as described in Section 8.

**For emergency responders:** Wear complete PPE with safety glasses, safety gloves, suitable protective clothing and closed shoes. In case of leakage, where exposure is high, it is recommended to use a suitable respiratory protection mask.

**Environmental precautions:** Avoid that the dispersed gas reaches waterways or sewage system.

**Methods and materials for containment and cleaning up:** Release the contents slowly into the atmosphere. Stay downwind. Do not pour water directly into the leak point. Due to the product dispersion in the environment, it is recommended that the area is ventilated until the release site. For final destination, proceed pursuant to Section 13 of this SDS.

### 7 - HANDLING AND STORAGE

#### Precautions for safe handling

**Precautions for safe handling:** Handle in a well ventilated area or with general system of ventilation/local exhaust. Avoid gases and aerosols formation. Avoid exposure to the chemical, since the effects may not be felt immediately. Avoid contact with incompatible materials.

**General hygiene:** Wash hands and face thoroughly after handling and before eating, drinking, smoking or going to the bathroom. Contaminated clothing should be changed and washed before reuse. Remove clothing and protective equipment contaminated before entering eating areas.

#### Conditions for safe storage, including any incompatibilities

**Technical measures for prevention of fire and explosion:** Keep away from heat, sparks, open flames and hot surfaces. - Do not smoke. Keep container tightly closed. Ground the container vessel and the receiver of the product during transfers. Only use anti-sparking tools. Avoid the accumulation of electrostatic charges. Use electrical equipment, ventilation and lighting explosion proof. Use personal protective equipment as described in Section 8.

**Conditions for safe storage, including any incompatibilities:** Store in a well ventilated place, away from sunlight. Keep container closed. Keep away from high temperatures and ignition sources.  
It is not necessary addition of stabilizers and antioxidants to ensure the durability.  
This material may react dangerously with some incompatible materials as outlined in Section 10.  
Keep away from incompatible materials.

**Packaging compatibilities:** Carbon steel balls.

**Inadequate packaging materials:** There are not known unsuitable material.

### 8 - EXPOSURE CONTROLS/PERSONAL PROTECTION

#### Control parameters

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**Occupational exposure limit:** The values below apply to workplaces.  
 NIOSH - REL - TWA: 800 ppm (1900 mg/m<sup>3</sup>);  
 ACGIH - TLV - STEL: 1000 ppm (EX).  
 EX: Explosion hazard: the substance is a flammable asphyxiant or excursions above the TLV® could approach 10% of the lower explosive limit.

**Biological limit:** Not established.

**Other limits and values:** Not established.

**Appropriate engineering controls:** Promote mechanical ventilation and exhaust system to outside. These acts help reducing the exposition to the product. It is recommended to make emergency showers and eye wash facilities available in the work area. Maintain airborne concentrations of the substance or mixture below stated occupational exposure limits. Maintain atmospheric concentrations of the constituents of the material below occupational exposure limits indicated.

**Individual protection measures, such as personal protective equipment (PPE)**

**Eye/face protection:** Wide-view glasses with splash protection.

**Skin protection:** Safety shoes and safety clothing to protect the whole body from chemical splashes. Protective gloves against chemicals such as PVC.

**Respiratory protection:** Use of respirator with filter against vapors and organic mists is recommended for average exposures above half the TLV-TWA. In cases where exposure exceeds 3 times the TLV-TWA value, use a self-contained, full facepiece, air-supplied respirator (SCBA) operated in positive pressure mode. Follow guidance from the Respiratory Protection Program (PPR), 4th ed. São Paulo: Fundacentro, 2016.

**Thermal hazards:** It does not present thermal hazards.

### 9 - PHYSICAL AND CHEMICAL PROPERTIES

**Aspect:** Gas.

**Color:** Colorless.

**Odour:** Odorless.

**Melting point/freezing point:** -138 °C (-216.4 °F).

**Boiling point or initial boiling point and boiling range:** -1 °C (30.2 °F).

**Flammability:** Flammable.

**Lower and upper explosion limit/flammability limit:** Upper: 8.4 % and Lower: 1.8 %.

**Flash point:** Not applicable.

**Auto-ignition temperature:** 405 °C (761 °F).

**Decomposition temperature:** Not available.

**pH:** Not applicable.

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Kinematic viscosity:	Not available.
Solubility(ies):	Miscible in water (> 500 g/L). Soluble in ether, chloroform and alcohol.
Partition coefficient n-octanol/water (log value):	Not available.
Vapour pressure:	2 atm (20650 Pa) at 18.8 °C (65.84 °F).
Relative vapour density:	2.05 (air = 1).
Density and/or relative density:	Relative density: 0.573.
Particle characteristics:	Not applicable.
Other information:	Not applicable.

### 10 - STABILITY AND REACTIVITY

Reactivity:	Reactivity is not to be expected under normal conditions of temperature and pressure.
Chemical stability:	Stable product under normal conditions of temperature and pressure.
Possibility of hazardous reactions:	Spontaneously explosive in chlorinated sunlight. Forms explosive mixture with air and oxidizing agents. Extremely explosive in contact with oxygen and tetracarbonic nickel.
Conditions to avoid:	Elevated temperatures. Ignition sources. Contact with incompatible materials. Contact with incompatible materials.
Incompatible material:	Carbon dioxide, carbonyl, chlorine, nickel and strong oxidizing agents.
Hazardous decomposition products:	Decomposition releases anesthetic vapors, carbon monoxide and carbon dioxide.

### 11 - TOXICOLOGICAL INFORMATION

Acute toxicity:	It is a simple asphyxiant and, in high concentrations, causes asphyxiation by reducing the concentration of oxygen in the environment. Harmful if inhaled. LC <sub>50</sub> Gases (rats, 4h): > 658 µ L/L (ppm).
Skin corrosion/irritation:	Not classified for skin corrosion/irritation.
Serious eye damage/irritation:	Not classified for serious eye damage/eye irritation.
Respiratory or skin sensitization:	It is not expected to present respiratory or skin sensitization.
Germ cell mutagenicity:	Not classified for germ cell mutagenicity. Concentration of 1,3-butadiene is less than 0.1%.
Carcinogenicity:	Not classified for carcinogenicity. Concentration of 1,3-butadiene is less than 0.1%.
Reproductive toxicity:	It is not expected to be reproductively toxic.
STOT - Single exposure:	It is not expected to exhibit specific target organ toxicity by single exposure.
STOT - Repeated	It is not expected to exhibit specific target organ toxicity on repeated exposure.

In accordance with Globally Harmonized System of Classification and Labelling of Chemicals (GHS)- Chapter 1.5 and Annex 4

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exposure:

Aspiration hazard: It is not expected to present an aspiration hazard.

### 12 - ECOLOGICAL INFORMATION

Toxicity: It is not expected to be ecotoxic.

Persistence and degradability: Due to the lack of data, it is expected to be persistent and not rapidly degraded.

Bioaccumulative potential: Due to the lack of data, bioaccumulative potential in aquatic organisms is not expected.

Mobility in soil: Not determined.

Other adverse effects: No other environmental effects known.

### 13 - DISPOSAL CONSIDERATIONS

#### Disposal methods

Must be disposed of as hazardous waste in compliance with local regulations. The treatment and disposal should be evaluated for each specific product.

Keep the product remains in its original and properly closed containers. Disposal should be performed as established for the product.

### 14 - TRANSPORT INFORMATION

**Road:** UN - United Nations: Model Regulations:  
• Recommendations on the Transport of Dangerous Goods.

UN number: 1011

Proper shipping name: BUTANE

Primary risk class or division: 2.1

Subsidiary risk class or division: NA

Packing group: NA

Environmental hazards: The product is not considered dangerous for the environment for land transport.

**Railway regulations:** COTIF - Convention concerning International Carriage by Rail:  
• Appendix C: RID - Regulations concerning the International Carriage of Dangerous Goods by Rail.

UN number: 1011

Proper shipping name: BUTANE

Primary risk class or division: 2.1

Subsidiary risk class or division: NA

Packing group: NA

Environmental hazards: The product is not considered dangerous for the environment in rail transport.

In accordance with Globally Harmonized System of Classification and Labelling of Chemicals (GHS)- Chapter 1.5 and Annex 4

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<b>Sea:</b>	IMO - International Maritime Organization: • IMDG Code - International Maritime Dangerous Goods Code.
UN number:	1011
Proper shipping name:	BUTANE
Primary risk class or division:	2.1
Subsidiary risk class or division:	NA
Packing group:	NA
Environmental hazards:	It's not considered a marine pollutant for transportation.
EmS:	F-D,S-U
<b>Air:</b>	IATA - International Air Transport Association: • DGR - Dangerous Goods Regulation.
UN number:	1011
Special precautions for user:	Not applicable.
Other information:	Air transport is permitted only in small packages containing up to 0.5 kg - UN 2037.
Maritime transport in bulk according to IMO instruments:	Consult regulations: • International Maritime Organization: MARPOL: Articles, protocols, annexes, unified interpretations of the International Convention for the Prevention of Pollution from Ships, 1973, as modified by the Protocol of 1978 relating thereto, consolidated edition. IMO, London, 2006; • International Maritime Organization: IBC code: International code for the construction and equipment of shipping carrying dangerous chemicals in bulk: With Standards and guidelines relevant to the code. IMO, London, 2007.

### 15 - REGULATORY INFORMATION

Convention concerning Safety in the use of Chemicals at Work (Convention 170) - International Labour Organization, 1990.

### 16 - OTHER INFORMATION

This SDS was prepared based on current knowledge about the proper product handling and under normal conditions of use, in accordance with the application specified on the packaging. Any other use of the product involving their combination with other materials, and use various forms of those indicated, are the responsibility of the user. Warns that the handling of any chemical substance requires the prior knowledge of its hazards for the user. In the workplace it is for the user company's product promotes training of its collaborators about the possible risks arising from exposure to the chemical.

#### Change control:

Version	Manufacture date	Changes
01	03/20/2023	Elaboration

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### Abbreviations:

ACGIH - American Conference of Governmental Industrial Hygienists;

CAS - Chemical Abstracts Service;

LC<sub>50</sub> - Lethal Concentration 50%;

NIOSH - National Institute for Occupational Safety and Health;

REL - Recommended Exposure Limit;

STEL - Short Term Exposure Limit;

TLV - Threshold Limit Value;

TWA - Time Weighted Average;

UN - United Nations.

### Bibliographic references:

ACGIH - AMERICAN CONFERENCE OF GOVERNMENTAL INDUSTRIALS HYGIENISTS. TLVs® and BEIs®: Based on the Documentation of the Threshold Limit Values (TLVs®) for Chemical Substances and Physical Agents & Biological Exposure Indices (BEIs®). Cincinnati-USA, 2023.

GHS - GLOBALLY HARMONIZED SYSTEM OF CLASSIFICATION AND LABELLING OF CHEMICALS. 10th rev. ed. New York and Geneva: United Nations, 2023.