



SAFETY DATA SHEET

[In accordance with the criteria of Regulation No 1907/2006 (REACH) and 453/2010]

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

1.1 Product identifier

n-Butane gas container CAN220, CA300, CA445, CA500

1.2 Relevant identified uses of the substance or mixture and uses advised against

Relevant identified uses: container [cartridge] with n-butane intended to be used as fuel for N-butane stoves and other appliances used during caravanning or camping.

Uses advised against: not determined.

1.3 Details of the supplier of the safety data sheet

Supplier: **Unilight Polska Sp. z o.o.**
Address: ul. Zachodnia 3, 55-011 Siechnice, Poland
Telephone: 71 / 381 95 95 ext. 24
Fax: 71 / 381 95 95 ext. 21 or 27 or 694 412 795
E-mail address for a competent person responsible for SDS: unilight@unilight.pl

1.4 Emergency telephone number

112

Section 2: Hazards identification

2.1 Classification of the substance or mixture

Classification according to 1999/45/EC

F+ R12

Extremely flammable.

Classification according to 1272/2008/EC

Flam. Gas 1 H220, Press. Gas H280

Extremely flammable gas. Contains gas under pressure; may explode if heated.

2.2 Label elements*

Hazard pictograms and signal words



DANGER

Product identifier

None.

Hazard statements

H220 Extremely flammable gas.

H280 Contains gas under pressure; may explode if heated.

Precautionary statements

P102 Keep out of reach of children.

P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

P243 Take precautionary measures against static discharge.



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P377 Leaking gas fire: Do not extinguish, unless leak can be stopped safely.
 P381 Eliminate all ignition sources if safe to do so.

* As a butane gas container, the product should be marked in accordance with the requirements of EN 417.

2.3 Other hazards

Substances contained in the product do not meet the criteria for PBT or vPvB in accordance with Annex XIII of REACH Regulation. Substance is easily explosive when mixed with air (mixture of air and gas) and when there are sources of ignition in the vicinity or a direct contact of the container with flames. Gas substance is heavier of air, accumulates by the ground and depressions, lower parts of premises. There is a possibility of its inflammation. In high concentrations it may cause nausea, headaches and dizziness, in extreme cases symptoms lead to unconsciousness and death. The liquid phase may cause frostbite in contact with skin.

Section 3: Composition/information on ingredients

3.1 Substances

Not applicable.

3.2 Mixtures

A complex mixture of aliphatic hydrocarbons contains: n-butane (C4) [as a main component]; isobutane, butenes, ethane, propane, propene, pentanes, pentanes and higher hydrocarbons [as remaining components]. There may occur some trace amounts of mercaptans and sulfur. The product may also contain 1,3-Butadiene which is classified as carcinogenic (Carc 1A) and mutagenic (Muta. 1B) (601-013-00-X) in a concentration below 0,1%.

butane

Range of percentages: $\geq 95\%$
 CAS number: 106-97-8
 EC number: 203-448-7
 Index number: 601-004-00-0
 Registration number: substance comes under the law of temporary period
 Classification acc. to 67/548/EC: **F+ R12**
 Classification acc. to 1272/2008/EC: Flam. Gas 1 H220, Press. Gas H280
 Full text of each relevant H and R phrase is in chapter 16.

Section 4: First aid measures

4.1 Description of first aid measures

Skin contact: take off contaminated clothes and wash them before next use. Before removing contaminated clothing, wet it with water due to the fire hazard. In case of a quick release of the product, it may cause frostbite. Rinse frostbitten places with cool water. Take off all clothing, if possible. Do not take off if cannot be removed easily. Warm frostbitten areas slowly. Cover with a sterile dressing. Do not use ointments and powders.

Eye contact: wash out with plenty of water (10-15 minutes) with the eyelid hold wide open. Protect non-irritated eye, remove contact lenses. Use sterile dressing in case of frostbite. Consult a doctor immediately.

Ingestion: exposure by this route does not occur.

Inhalation: remove to fresh air. Keep warm and calm. Consult a doctor, if disturbing symptoms persist.

4.2 Most important symptoms and effects, both acute and delayed

Skin contact: contact with liquefied gas can cause frostbite.

Eye contact: contact with liquefied gas can cause frostbite, cornea damage.

Inhalation: low concentration of gas in the air causes tearing, cough, narcosis, high concentration of gas causes dizziness, nausea, vomiting, dyspnea, clouding of consciousness, drowsiness, loss of consciousness.



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4.3 Indication of any immediate medical attention and special treatment needed

Physician makes a decision regarding further medical treatment after thoroughly examination of the injured.

Section 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media: small fire: outdoors - leave the gas to burn out. In confined areas - extinguish with dry chemical or foam fire extinguisher.

Large fire: isolate a source of gas and use water spray.

Unsuitable extinguishing media: water jet – risk of the propagation of the flame.

5.2 Special hazards arising from the substance or mixture

May produce toxic gases of carbon monoxide if burning. Do not inhale combustion products, they can be dangerous for human health. Overheated containers with gas may explode.

5.3 Advice for firefighters

Personal protection typical in case of fire. Do not stay in the fire zone without self-contained breathing apparatus and protective clothing resistant to chemicals. Extremely flammable gas. Forms explosive mixture with air; the gas is heavier than air, accumulates by the ground and depressions, lower parts of premises. It displaces oxygen from the air. In case of fire or high temperature, cool endangered containers with water spray (danger of explosion), remove them from endangered zone, if possible.

Section 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

For non-emergency personnel: limit the access of the outsiders into the breakdown area, until the suitable cleaning operations are completed. Evacuate the bystanders from the danger zone. Prohibit smoking or using naked flame. Take precautionary measures against static discharges. Use personal protective equipment. Avoid contact with skin and eyes. Do not breathe gas.

For emergency responders: ensure that removing the problem and its results is conducted by a trained personnel only. Wear safety clothing.

6.2 Environmental precautions

Do not empty into drains, basements (danger of explosion). Notify relevant emergency services.

6.3 Methods and material for containment and cleaning up

Small spillage: let the gas evaporate and ventilate the exposed area.

Large spillage: eliminate a source of leak (close down the gas supply, seal the container), disperse the gas e.g. by using water mist or safety curtain.

6.4 Reference to other sections

Appropriate conduct with waste product – see section 13. Personal protective equipment – see section 8.

Section 7: Handling and storage

7.1 Precautions for safe handling

Handle in accordance with good occupational hygiene and safety practices. When using do not eat, drink or smoke. Avoid contact of gas with skin, eyes and clothing. Do not pierce or burn, even after use. Use only in well-ventilated areas. Do not breath vapours. Protect from sources of ignition – do not smoke during filling. The product's vapours may form explosive mixture with air. Use personal protective equipment.



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7.2 Conditions for safe storage, including any incompatibilities

Keep in dry, cool and well-ventilated places. Keep away from sources of ignition. Avoid temperature above 50°C. Protect from direct exposure of sunlight. Do not store with food, beverages or feed for animals. Do not smoke, use open flame and sparking tools in the storage area. Ensure explosion-proof ventilation. Containers must be kept upright.

7.3 Specific end use(s)

Fuel for N-butane stoves and other appliances used during caravanning or camping.

Section 8: Exposure controls/personal protection

8.1 Control parameters

The product does not contain any components with occupational exposure limit values established at the Community level. Legal basis: Commission Directive 2006/15/EC, 2000/39/EC, 2009/161/EC.

Please check any national occupational exposure limit values in your country.

8.2. Exposure controls

Use the product in accordance with good occupational hygiene and safety practices. When working, do not eat, drink or smoke. Before break and after work wash hands carefully. Ensure adequate ventilation. Avoid contact of liquefied gas with skin, eyes and clothing.

Hand and body protection

Use protective gloves from neoprene or nitril rubber. Gloves should be flexible at a temperature below the atmospheric boiling point of the gas. It may be necessary to increase the frequency of changing gloves in case of immersion or prolonged contact with the product. Use protective clothing.



When using protective gloves during work with chemical products, it should be noted that the efficacy levels and corresponding breakthrough times do not indicate actual times of protection at a particular workplace, because the protection can be affected by many factors, e.g. temperature, other substances etc. If there are any signs of degradation, damage or change in appearance (colour, flexibility, shape), it is recommended to replace the gloves with a new pair. Please follow the manufacturer's instructions, not only in terms of gloves' usage, but also in terms of their cleaning, maintenance and storage. It is also important to know how to take off the gloves in order to avoid hands contamination.

Eye/face protection

Use protective glasses if there is a risk of spraying liquefied gas.

Respiratory protection

Not required in normal conditions of use. In case of exposure to high concentrations of gas or in emergency situations, use respiratory protection. If concentration of oxygen is $\leq 17\%$ and/or maximal concentration of gas in air is $\geq 1\%$, self-contained breathing apparatus should be used.

Applied personal protective equipment must comply with the requirements of the Directive 89/686/EC. The employer is obliged to provide protective equipment relevant to performed activities and in accordance with all quality requirements, including its maintenance and cleaning.

Environmental exposure controls

Gas evaporates very quickly after releasing to the environment. Do not empty into drains. Possible emissions from the ventilation systems and processing equipment should be controlled in order to determinate their compatibility with environmental protection regulations.

Section 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

physical state:	liquefied gas
colour:	colourless
odour:	odourless
odour threshold:	not determined
pH:	not applicable



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melting point/freezing point:	-187,6°C to -138°C
initial boiling point and boiling range:	-0,5°C
flash point: evaporation rate: flammability (solid, gas):	-60°C not determined extremely flammable
upper/lower flammability or explosive limits:	8,4% vol./1,8% vol.
vapour pressure:	0,11 MPa in 20°C 0,47 MPa in 40°C
density:	not determined
vapour density (200°C):	2,46 g/dm ³
relative density (air=1):	2,1
solubility(ies):	butane gas is poorly soluble in water; ca. 8 mg/dm ³ in 20 ° C, soluble in ethanol and diethyl ether
partition coefficient: n-octanol/water:	2,3
auto-ignition temperature:	405°C
decomposition temperature:	not determined
explosive properties:	forms explosive mixture with air
oxidising properties:	not display
viscosity:	not determined
9.2 Other information	
explosion group:	IIA
expansion in liquid form:	ca. 1% with a temperature increase of 6°C

Section 10: Stability and reactivity

10.1 Reactivity

Product is feebly reactive. Product does not undergo a dangerous polymerization.

10.2 Chemical stability

The product is stable under normal conditions of storage and use.

10.3 Possibility of hazardous reactions

Gas forms explosive mixture with air. It reacts explosively with chlorine oxide and strong oxidizing agents and barium peroxide at high temperature.

10.4 Conditions to avoid

Avoid direct exposure to sunlight, sources of heat and fire, temperatures above 50°C and static discharges.

10.5 Incompatible materials

Strong oxidizing agents.

10.6 Hazardous decomposition products

Not known.

Section 11: Toxicological information

11.1 Information on toxicological effects

Information regarding acute and/or delayed results of the exposure was defined on the basis of the information on product's classification and/or toxicological studies as well as the experience and knowledge of the manufacturer.

Components toxicity

n-butan

CL₅₀ (inhalation, rat)

658 000 mg/m³/4h



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Mixture toxicity

Acute toxicity

Based on available data, the classification criteria are not met.

Skin corrosion/irritation

Based on available data, the classification criteria are not met.

Serious eye damage/irritation

Based on available data, the classification criteria are not met.

Respiratory or skin sensitization

Based on available data, the classification criteria are not met.

Germ cell mutagenicity

Based on available data, the classification criteria are not met.

Carcinogenicity

Based on available data, the classification criteria are not met.

Reproductive toxicity

Based on available data, the classification criteria are not met.

STOT-single exposure

Based on available data, the classification criteria are not met.

STOT-repeated exposure

Based on available data, the classification criteria are not met.

Aspiration hazard.

Based on available data, the classification criteria are not met.

Effects of acute exposure

In case of inhalation of gases in concentration above 20%, symptoms are as follows: rapid heartbeat and respiration, problems with concentration and movements precision, dyspnea, confusion, drowsiness, nausea, vomiting. At higher concentrations - above 75%: drop in blood pressure, loss of consciousness, convulsions and respiratory disorders prior to death. Gaseous product does not show irritation of upper respiratory tract.

Effects of chronic exposure

Prolonged exposure to gas fumes may have adverse effects on central nervous system. Prolonged and repeated exposure in the atmosphere of gas in high concentrations - sniffing, breathing - may cause death by suffocation or heart attack.

Section 12: Ecological information

12.1 Toxicity

No specific data concerning toxicity. Product is not classified as dangerous for environment.

12.2 Persistence and degradability

Fast oxidation in photochemical reaction in air.

12.3 Bioaccumulative potential

Does not accumulate.

12.4 Mobility in soil

Product evaporates very quickly from soil and water. It disperses quickly in air.

12.5 Results of PBT and vPvB assessment

Not applicable.

12.6 Other adverse effects

The mixture is not classified as hazardous to the ozone layer. Consider other harmful effects of individual components of the mixture on the environment (eg, endocrine disrupting potential, global warming potential).



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Section 13: Disposal considerations

13.1 Waste treatment methods

Disposal methods for the product: taking into account the nature and the use of the product, the need of removing it is rare. Recommended method of disposal: burning. Recommended waste code: 16 05 04*.

Disposal methods for used packing: reuse/recycle/liquidate empty containers in accordance with the local legislation. Only completely empty containers may be recycled. Do not pierce or burn used containers.

Legal basis: Directive 2008/98/EC, 94/62/EC.

Section 14: Transport information

14.1 UN number (ONZ number)

2037

14.2 UN proper shipping name

RECEPTACLES, SMALL, CONTAINING GAS (GAS CARTRIDGES)

14.3 Transport hazard class(es)

2

14.4 Packing group

Not applicable.

14.5 Environmental hazards

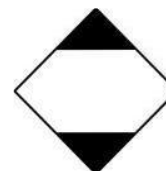
Mixture is not hazardous to the environment.

14.6 Special precautions for user

Packages shall not be thrown or subjected to impact. Receptacles shall be so stowed in the vehicle or container that they cannot overturn or fall.

14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable.



Section 15: Regulatory information

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

Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorization and Restriction of Chemicals (REACH), establishing a European Chemicals Agency, amending Directive 1999/45/EC and repealing Council Regulation (EEC) No 793/93 and Commission Regulation (EC) No 1488/94 as well as Council Directive 76/769/EEC and Commission Directives 91/155/EEC, 93/67/EEC, 93/105/EC and 2000/21/EC as amended.

Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006 as amended.

Council Directive 67/548/EEC of 27 June 1967 on the approximation of laws, regulations and administrative provisions relating to the classification, packaging and labeling of dangerous substances.

Directive 1999/45/EC of the European Parliament and of the Council of 31 May 1999 concerning the approximation of the laws, regulations and administrative provisions of the Member States relating to the classification, packaging and labelling of dangerous preparations.

Commission Regulation (EC) No 790/2009 of 10 August 2009 amending, for the purposes of its adaptation to technical and scientific progress, Regulation (EC) No 1272/2008 of the European Parliament and of the Council on classification, labelling and packaging of substances and mixtures (Text with EEA relevance).



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Commission Regulation (EU) No 453/2010 of 20 May 2010 amending Regulation (EC) No 1907/2006 of the European Parliament and of the Council on the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH) (Text with EEA relevance).

Directive 2008/98/EC of the European Parliament and of the Council of 19 November 2008 on waste and repealing certain Directives.

European Parliament and Council **Directive 94/62/EC** of 20 December 1994 on packaging and packaging waste.

15.2 Chemical safety assessment

There is no data concerning chemical safety assessment performed for substances contained in the mixture.

Section 16: Other information

Full text of indicated R and H phrases mentioned in chapter 3

R12	Extremely flammable.
H220	Extremely flammable gas.
H280	Contains gas under pressure; may explode if heated.

Clarification of aberrations and acronyms

PBT	Persistent, Bioaccumulative and Toxic substance
vPvB	very Persistent, very Bioaccumulative substance
Flam. Gas 1	Flammable gas, category 1
Press. Gas	Gases under pressure

Trainings

Before commencing working with the product, the user should learn the Health & Safety regulations, regarding handling chemicals, and in particular, undergo a proper workplace training. Persons related to the transportation of the dangerous goods in compliance with the ADR Agreement should be properly trained within the scope of performed tasks (general training, on-the-job training and training related to the safety issues).

Other data

Composed by: mgr Monika Gotowalska (on the basis of producer's data).
 Safety Data Sheet made by: „**THETA**“ Technical Consulting

The information above is based on a current available data concerning the product, but also on the experience and knowledge in this field of the producer. They are neither a quality description of the product nor a guarantee of particular features. They are to be treated as aid to safety in transport, storage and usage of the product. That does not free the user from the responsibility of improper usage of the information above and also of improper compliance with the law norms in the field.