

SECTION 1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING
1.1 Product identifier

Trade name	: Refill gas for lighters and burners
Chemical name	: Isobutane
CAS number	: 75-28-5
EC number	: 200-857-2
Index number	: 601-004-00-0
Registration number	: 01-2119485395-27-XXXX
Synonyms	: Art. 199008 Gas canister 200ml Art. 199046 Gas canister, set 4x 200ml

1.2 Relevant identified uses and uses advised against

Relevant identified uses	: Refill gas for lighters and burners
Uses advised against	: Product is not recommended for any industrial, professional or consumer use other than the applications identified above.

1.3 Details of the supplier of the safety data sheet

Supplier	: Hendi BV, Steenoven 21, 3911 TX Rhenen, Nederland tel: +31 (0)317 681040 info@hendi.eu www.hendi.eu
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1.4 Emergency telephone number

: NL NVIC Poison Centre: +31 (0)30 2748888 (only for medical personnel in case of acute or unintentional poisoning).

SECTION 2. HAZARDS IDENTIFICATION
2.1 Classification of the substance or mixture

EC Index number	: 200-857-2
CLP Regulation (EC 1272/2008)	: Flam. Gas 1 (H220), Press. Gas Liq. (H280)

2.2 Label elements

CLP Regulation (EG 1272/2008)



Pictogram(s)	: GHS02
Signal word	: <u>Danger</u>

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. P377 Leaking gas fire: Do not extinguish, unless leak can be stopped safely. P381 Eliminate all ignition sources if safe to do so. P410+P403 Protect from sunlight. Store in a well-ventilated place.

2.3 Other hazards

Do not puncture/pierce or incinerate, even after use. Do not expose to temperatures exceeding 50°C. Contact with liquefied gas may cause frostbites to eyes and skin due to rapid cooling caused by evaporation. Gas leads to asphyxiation in humans as a result of displacement of oxygen in the air. Too low oxygen concentration in the air can lead to loss of consciousness and death. Accumulated gas can ignite and/ or explode when brought near to ignition source. Substance does not contain ingredients, which meet criteria for PBT or vPvB in accordance with Annex XIII of REACH Regulation.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS
3.1 Substance:

Chemical name	CAS number	EC number	Registration nr	% (v/v)	Hazard statements (CLP 1272/2008)
Isobutane	75-28-5	200-857-2	01-2119485395-27-XXXX	≥ 99%	Flam. Gas 1 (H220), Press. Gas Liq. (H280)

3.2 Mixture: Not relevant.

SECTION 4. FIRST AID MEASURES
4.1 Description of first aid measures

General	: When any doubt always seek medical attention.
Contact with skin	: Take off contaminated clothes. Wash contaminated skin thoroughly with water and soap. Rinse the frozen body with cool water. Remove contaminated clothing, if possible, do not move if it adheres permanently to the skin. Do not try to warm them up the defrosted body parts quickly - warm up slowly. Put a sterile dressing. Do not use ointments or powders.
Contact with eyes	: Rinse contaminated eyes with water for at least 10-15 minutes with open eyelids. Avoid strong stream of water – risk of cornea damage. Protect non-irritated eye, remove contact lenses. In case of frostbite with a liquefied product, put on a sterile dressing. Immediately contact an ophthalmologist.
Ingestion	: Exposure by this hazard route is not expected.
Inhalation	: Remove the affected person to fresh air. Keep warm and calm. In the case of breathing is difficult, give oxygen. If disturbing symptoms appear, seek medical advice.

4.2 Most important symptoms and effects, both acute and delayed

Contact with skin	: Possible redness, burning, irritation. Contact with liquefied gas can cause frostbite.
Contact with eyes	: Redness, tearing, burning, blurred vision, irritation. Contact with liquid gas can cause frostbites.
Inhalation	: Low concentrations of the gas cause tearing, coughing, narcotic effects; high concentrations of gas causes dizziness, nausea and vomiting, short breath, rapid heartbeat, dyspnoea, disturbances in consciousness, drowsiness. In concentrations >70% it causes an obvious fall in blood pressure, loss of consciousness, tremors, breathing abnormalities and death.

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. Person giving first aid within the danger area should be equipped with respiratory protection. In case disturbing symptoms, administer oxygen. Substance in form of a light hydrocarbon – can cause faster heart rate as a result of exposure to very high concentrations (significantly exceeding occupational exposure limit values) or at concurrent exposure to high stress level or substances stimulating heart rate e.g., epinephrine. Avoid administration of such substances.

SECTION 5. FIREFIGHTING MEASURES
5.1 Extinguishing media

Suitable extinguishing media	: Extinguishing powder, water spray, carbon dioxide, extinguishing foam. Small fire: on open grounds let it burn out, control a safe distance and cool it with water. In confined rooms, extinguish with powder or carbon dioxide fire extinguisher.
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Large fire: after cutting off gas supply, extinguish with sprayed water. Cool down containers and cylinders exposed to fire or high temperature with water at a safe distance (danger of explosion). Remove them from the fire area if it is possible.

Unsuitable extinguishing media : Water jet - risk of propagation of the flame.

5.2 Special hazards arising from the substance or mixture

During combustion harmful fumes consisting of carbon oxides. Do not inhale combustion products, it may cause health risk. Forms explosive mixtures with air.

5.3 Advice for fire fighters

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, heavier than air, accumulates in the lower parts of the rooms. There is a high probability that an explosive mixture will form with air - in the event of such danger, order an immediate evacuation. Cool endangered containers with water spray from a safe distance. Containers/canisters exposed to fire or high temperature may explode. Collect used extinguishing media. Do not let extinguishing agents to reach drainage system and waters.

SECTION 6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Limit the access for the outsiders into the breakdown area, until the suitable cleaning operations are completed. Ensure that removing the problem and its results is conducted by a trained personnel only. In case of large spills, isolate the exposed area. Close the gas supply / leak if it is possible and safe. Use personal protective equipment. Avoid contact with skin and eyes. Ensure adequate ventilation. Do not enter to closed / heavily built-up spaces without a breathing apparatus. Avoid direct contact with releasing gas. Eliminate sources of ignition - do not use open fire and sparking tools, do not smoke.

6.2 Environmental precautions

In case of release of large amounts of the product, it is necessary to take appropriate steps to prevent it from spreading into the environment. Notify relevant emergency services.

6.3 Methods and material for containment and cleaning up

Small leakage: leave to evaporate. Thoroughly ventilate dangerous area.

Large leakage: disperse leaking gas with e.g., water curtains. Close gas leakage, seal containers, if it is safe to do. Thoroughly ventilate dangerous area.

6.4 Reference to other sections

For personal protection - section 8. Disposal - section 13

SECTION 7. HANDLING AND STORAGE

7.1 Precautions for safe handling

Handle in accordance with good occupational hygiene and safety practices. Before break and after work wash hands carefully. Do not eat, drink or smoke when using the product. Avoid contact of liquefied gas with eyes and skin. Ensure adequate ventilation. Vapours may form explosive mixtures with air. Do not inhale gas. Prevent gas accumulation in the air and occurrence of concentration within the explosive property limits or exceeding OEL. Eliminate ignition sources – do not use open fire, do not smoke, do not use sparking tools; protect containers/canisters against heating, install explosion-proof electrical equipment. Use appropriate measures to prevent electrostatic discharges.

7.2 Conditions for safe storage

Store only in certified, properly labelled packages. Store in dry, cool and well-ventilated place. Keep away from ignition sources. Avoid temperatures exceeding 50°C (122°F). Avoid direct expose to sunlight. Do not store together with food and animal food. Do not smoke and do not use open fire and sparking tools in the area of the warehouse. Do not store with incompatible materials (see subsection 10.5).

7.3 Specific end use(s)

There is no information available on uses other than those listed in Section 1.2.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Occupational exposure limit values :

There are no occupational exposure limit values at working place for this substance at the Community level.

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

Legal Basis: Commission Directive 2006/15/EC, 2000/39/EC, 2009/161/EU, 2017/164/EU

8.2 Exposure controls

Use the product in accordance with good occupational hygiene and safety rules. Do not eat, drink or smoke during work. Wash hands thoroughly before breaks and after work. Avoid contact of liquefied gas with skin and eyes. Ensure adequate general and/or local ventilation in the workplace.

Hand and body protection:

Use protective gloves with thermal isolation. The gloves must remain flexible at temperatures below the atmospheric boiling point of the gas. It may be necessary to increase the frequency of gloves change if there is an immersion or prolonged contact with the product. Wear antistatic protective clothing.

The material that the gloves are made of must be impenetrable and resistant to the product's effects. The selection of material must be performed with consideration of breakthrough time, penetration speed and degradation. Moreover, the selection of proper gloves depends not only on the material, but also on other quality features and changes depending on the manufacturer. The producer should provide detailed information regarding the exact breakthrough time. This information should be followed.

Eye protection:

It is not required.

Respiratory protection:

In case of exceeding the permissible NDS values, emergency, use absorbing equipment of AX type (class 1/protection against gases or vapours with a concentration in the air volume not exceeding 0.1%, class 2 / protection against gases or vapours with a concentration in the air not exceeding 0.5%, class 3 / protect against gases or vapours at concentrations in the air volume to 1%). In cases where the oxygen concentration is $\leq 19\%$ and / or maximum concentration of toxic substances in the air is $\geq 1.0\%$ by volume breathing apparatus should be used.

Applied personal protective equipment must comply with the requirements of the Regulation 2016/425/EU. 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

Avoid release to the environment, do not enter the sewage system. Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Appearance	: liquefied gas / liquid
Colour	: colourless
Odour	: odourless
Odour threshold	: not applicable
pH value	: not applicable
Melting/freezing point	: ca. -159°C
Initial boiling point and boiling range	: -42°C
Flash point	: $< -60^{\circ}\text{C}$
Evaporation rate	: not determined
Flammability (solid, gas)	: extremely flammable gas
Upper/lower flammability or explosive limits	: 8,4% by vol./1.8% by vol.

Refill gas for lighters and burners

Vapour pressure (20°C)	: 210-900 kPa
Vapour density (air = 1)	: > 1
Density (25°C)	: 0,589 g/cm ³
Solubility(ies)	: practically insoluble in water, soluble in most organic solvents
Partition coefficient <i>n</i> -octanol/water	: not determined
Auto-ignition temperature	: 287°C
Decomposition temperature	: not determined
Explosive properties	: forms an explosive mixture with air
Oxidising properties	: not display
Viscosity	: not determined

9.2 Other information

No other results available.

SECTION 10. STABILITY AND REACTIVITY**10.1 Reactivity**

Product is reactive. The substance does not undergo dangerous polymerisation. Extremely flammable gas, can form explosive mixtures with air. See also subsections 10.3 - 10.5

10.2 Chemical stability

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

10.3 Possibility of hazardous reactions

Gas forms explosive mixture with air. Possible exothermic reactions with strong oxidants.

10.4 Conditions to avoid

Avoid direct sunlight, heating, high temperatures, sources of ignition, fire and heat, electrostatic 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**Acute toxicity

LD50 (inhalation, rat) 1443 mg/l (OECD 403)

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

Skin corrosion/irritation

Causes skin irritation.

Serious eye damage/irritation

Causes serious eye irritation.

Respiratory or skin sensitisation

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

Germ cell mutagenicity

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

Carcinogenicity

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

Reproductive toxicity

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

STOT – single exposure

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

STOT – repeated exposure

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

Aspiration hazard

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

Additional information

Gas leads to asphyxiation (through displacement of oxygen in the ambient air), inhalation exposure can result in drowsiness, dyspnoea, rapid breathing, difficulty with breathing, headaches and dizziness, increased heart rate; at high gas concentrations (when oxygen concentration drops down to $\leq 17\%$) mental confusion, nausea, vomiting and loss of consciousness can occur.

- 11.2 Other information** : 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.

SECTION 12. ECOLOGICAL INFORMATION**12.1 Toxicity:**

The substance is not classified as dangerous for the aquatic environment.

12.2 Persistence and degradability

Easily biodegradable.

12.3 Bioaccumulative potential

Bioaccumulation is not expected.

12.4 Mobility in soil

Due to high volatility, the product does not contribute to soil contamination.

12.5 Results of PBT and vPvB assessment

The substance does not meet the criteria of a PBT or vPvB substance.

12.6 Other adverse effects

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

SECTION 13. DISPOSAL CONSIDERATIONS

- 13.1 Waste treatment methods** : Disposal methods for the product: full containers/canister that cannot be used should be transferred to the producer for utilization (controlled combustion).
Waste code: 16 05 04 * (gases in containers (including halons) containing dangerous substances).
Disposal methods for used packaging: emptied containers must be aired out. Aired out containers are to be treated as non-dangerous waste. Reuse / recycle / eliminate empty containers in accordance with the local legislation.

- 13.2 Other information** : Take note of framework waste Directive (2008/98/EC) and Directive on packaging and packaging waste (94/62/EC).

SECTION 14. TRANSPORT INFORMATION**14.1 UN Number:**

UN 2037

14.2 UN Proper shipping name:

RECEPTACLES, SMALL, CONTAINING GAS (GAS CARTRIDGES)

14.3 Transport hazard class(es):


Class: 2
 Classification code: 5F
 Label: 2.1

14.4 Packing group:

Not applicable.

14.5 Environmental hazards:

Product is classified as dangerous for the environment according to transport regulations.

14.6 Special precautions for user:

When handling the load, use personal protective equipment in accordance with Section 8.
 Avoid sources of ignition and fire.

14.7 Transport in bulk according to Annex II of MARPOL and the IBC Code:

Not applicable

SECTION 15. REGULATORY INFORMATION
15.1 Safety, health and environmental regulations/legislation (EC)

REACH (EC 1907/2006)

- a) Substance of potential concern (Art.59) : Components are not included as substance of potential concern.
- b) Authorisation (Title VII) : Components are not included on authorisation list.
- c) Restrictions (Title VIII) : Components are not included on list of restrictions.

15.2 Chemical safety assessment : It is not necessary to carry out a chemical safety assessment for the substance.

SECTION 16. OTHER INFORMATION
16.1 Revision comments

With current version 01-04: Active substance has been changed.
 A vertical line in the left margin indicates that there is a relevant amendment from the previous version.

16.2 Abbreviations and acronyms used in the safety data sheet

Composition/information on ingredients (Section 3) : Flam. Gas 1 = Flammable gas category 1
 Press. Gas Liq. = Pressurized gas liquid

Handling and storage (Section 7) : OEL = Occupational Exposure Limit

Toxicological information (Section 11) : LD50 = Dose at which death of 50% of the studied organisms is observed.

Ecological information (Section 12) : PBT = Persistent bioaccumulative toxic chemical
 vPvB = Very persistent and very bioaccumulative

16.3 References and sources for data : This sheet was prepared on the basis of on manufacturer's data, literature data, online databases, our knowledge and experience, taking into account the current legislation.
 SER limits database



16.4 Other information and disclaimer

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).

All information given in this Safety Data Sheet is exclusively related to the product described and is provided assuming that the product will be used in a way and for the purposes as stated by the manufacturer. The information is based on our present state of knowledge and will be reviewed regularly. This Safety Data Sheet has only been set up with the intention to describe the safety aspects of the product and therefore should not be construed as guaranteeing specific properties of the product of concern or its suitability for a particular application. It is the user's own responsibility to take the precautionary measures described and also to take care that this information is complete and adequate for the use of this product. It is recommended to pass through the information in this Safety Data Sheet, whenever necessary in an adapted form, to all staff and interested parties of concern.

- *Changes, printing and typesetting errors reserved.*