

Safety Data Sheet

according to Regulation (EC) Nr. 1907/2006 (REACH)

Print date: 08.12.2015

Revision number 2.1

Version date: 08.12.2015

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

1.1 Product identifier

· **Product name:** Gas Enthorner

· **Product codes:** 1730, 1731, 1756

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

· **Identified uses of the substance or mixture**

Liquefied gas mixture

1.3 Details of the supplier of the safety data sheet

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1.4 Emergency telephone number:

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2 Hazards identification

2.1 Classification of the substance or mixture

Classification according to Regulation (EC) Nr. 1272/2008

Flammable gases: Flam. Gas 1 (H220)

Gases under pressure: Liquefied Gas (H280)

2.2 Label elements

Label elements according to Regulation (EC) Nr. 1272/2008 (CLP/GHS)

Hazard pictograms



Flame (GHS 02)



Gas cylinder (GHS 04)

Signal word

Danger



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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

· The mixture does not meet the criteria for PBT or vPvB.

3 Composition/information on ingredients

Chemical Characterization: Mixtures
Hazardous ingredients:

CAS: 106-97-8 EC-Nr. 203-448-7 Index-Nr 601-004-00-0	n-Butane Flam. Gas 1, H220; Press. Gas, H280	54 %
CAS: 75-28-5 EC-Nr. 200-857-2 Index-Nr 601-004-00-0	Isobutane Flam. Gas 1, H220; Press. Gas, H280	24 %
CAS: 74-98-6 EC-Nr. 200-827-9 Index-Nr 601-003-00-5	Propane Flam. Gas 1, H220; Press. Gas, H280	22 %

Additional information:

The wording of the listed risk phrases and hazard statements refer to section 16.

4 First aid measures

4.1 Description of first aid measures
· Inhalation:

In low concentrations may cause narcotic effects. Symptoms may include dizziness, headache, nausea and loss of co-ordination. 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:

In case of frostbite spray with water for at least 15 minutes. Apply a sterile dressing. Obtain medical assistance.



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· Eye contact:

Immediately flush eyes thoroughly with water for at least 15 minutes. Obtain medical assistance.

· Ingestion:

Ingestion is not considered a potential route of exposure.

4.2 Most important symptoms and effects, both acute and delayed

No data available.

4.3 Indication of any immediate medical attention and special treatment needed

No data available.

5 Firefighting measures

5.1 Extinguishing media

Suitable methods of extinction - All known extinguishants can be used.

Unsuitable methods of extinction - None.

5.2 Special hazards arising from the substance or mixture

Exposure to fire may cause containers to rupture/explode.

Hazardous combustion products: Incomplete combustion may form carbon monoxide.

5.3 Advice for firefighters**Special protective equipment:** In confined space use self-contained breathing apparatus.**Further information**

If possible, stop flow of product. Move container away or cool with water from a protected position.

Do not extinguish a leaking gas flame unless absolutely necessary. Spontaneous/explosive reignition may occur. Extinguish any other fire.

6 Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Wear self-contained breathing apparatus when entering area unless atmosphere is proved to be safe. Evacuate area. Ensure adequate air ventilation. Eliminate ignition sources.

Consult the safety measures listed under headings 7 and 8.

6.2 Environmental precautions:

Try to stop release. Prevent from entering sewers, basements and workpits, or any place where its accumulation can be dangerous.

6.3 Methods and material for containment and cleaning up:

Ventilate area. Keep area evacuated and free from ignition sources until any spilled liquid has evaporated. (Ground free from frost).

6.4 Reference to other sections

Information regarding safe handling see chapter 7.

Information regarding personal protection see chapter 8.

Information regarding disposal see chapter 13.



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7 Handling and storage

7.1 Precautions for safe handling

Ensure equipment is adequately earthed. Suck back of water into the container must be prevented. Purge air from system before introducing gas. Do not allow backfeed into the container. Use only properly specified equipment which is suitable for this product, its supply pressure and temperature. Contact you gas supplier if in doubt. Keep away from ignition sources (including static discharges). Refer to supplier's handling instructions.

7.2 Conditions for safe storage, including any incompatibilities

Storage

Secure cylinders to prevent them from falling. Segregate from oxidant gases and other oxidants in store. Keep container below 50°C in a well ventilated place.

7.3 Specific end use(s) Keep out of reach of children.

8 Exposure controls/personal protection

8.1 Control parameters

Occupational exposure limits	Exposure				
	Country	limit	ml/m ³	mg/m ³	Remarks
106-97-8 Butan	D, TRGS 900	AGW	1000	2400	4(II);DFG
	UK, WEL	TWA	600	1450	8 h
		STEL	750	1810	15 min
	F, INRS	VME	800	1900	8 h
75-28-5 Isobutan	D, TRGS 900	AGW	1000	2400	4(II);DFG
74-98-6 Propan	D, TRGS 900	AGW	1000	1800	4(II);DFG
	UK, WEL	TWA	1000	1800	8 h

8.2 Exposure controls / Personal protection

Ensure adequate ventilation. Do not smoke while handling product.

Eye / face protection

Use eye protectors designed to protect against liquid splashes. Before handling, wear safety goggles with protective sides accordance with standard EN166. In the event of high danger, protect the face with a face shield.

Hand / skin protection

Protect skin from liquid splashes. Wear working gloves and safety shoes while handling containers. Use suitable protective gloves that are resistant to chemical agents in accordance with standard EN374.

Respiratory protection

Ensure adequate air ventilation. In case of insufficient ventilation, wear self-contained breathing apparatus.

Thermal hazards

Pressurised container: May burst if heated.

Exposure controls regarding environmental protection

No data available.



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9 Physical and chemical properties

9.1 Information on basic physical and chemical properties

- **General Information**
- **Appearance:**
 - Form: Liquefied gas mixture
 - Colour: Colourless
- **Odour:** No odour warning properties
- **Smell Threshold:** not determined
- **pH:** not determined
- **Change of state**
 - Melting point/range: not relevant
 - Boiling point/range: -42,1/-11,7/-0,5 °C (Propane/Isobutane/Butane)
- **Flash point:** -104/-83/-60 °C (Propane/Isobutane/Butane)
- **Flammability (solid, gas):** Extremely flammable gas
- **Ignition temperature:** 450/460/365 °C (Propane/Isobutane/Butane)
- **Thermal decomposition:** not relevant
- **Autoinflammability:** not self-flammable
- **Explosion hazard:** Pressurised container: May burst if heated.
- **Explosion limits:**
 - Lower: 1,7/1,5/1,4 Vol.-% (Propane/Isobutane/Butane)
 - Upper: 10,8/9,4/9,4 Vol.-% (Propane/Isobutane/Butane)
- **Vapour pressure at 20 °C:** 2.73 bar
- **Density:** 0.559 (water = 1), liquid
- **Bulk density:** not relevant
- **Vapour density:** 1.91 (air = 1), gas
- **Evaporation rate:** not determined
- **Solubility / miscibility**
 - Water: No reliable data available.
- **Partition coefficient (n-Octanol/Water):** not determined
- **Viscosity:** not determined
- **Oxidising properties:** not determined

9.2 Other information

Gas/vapour heavier than air. May accumulate in confined spaces, particularly at or below ground level.

10 Stability and reactivity

10.1 Reactivity Heating may cause a fire or explosion.

10.2 Chemical stability This mixture is stable under the recommended handling and storage conditions in section 7.

10.3 Possibility of hazardous reactions No hazardous reactions when stored under the recommended handling and storage conditions. Can form explosive mixture with air. May react violently with oxidants.



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10.4 Conditions to avoid: Sunlight. High temperatures. Keep away from sources of ignition.

10.5 Incompatible materials: Reacts with strong oxidants.

10.6 Hazardous decomposition products: None when used as intended.

11 Toxicological information

11.1 Information on toxicological effects

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.

Eye damage/irritation:

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

Sensitisation, respiratory or skin:

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

Carcinogenicity, germ cell mutagenicity, reproductive toxicity (CMR):

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

Specific target organ toxicity (STOT), single/repeated exposure:

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

Aspiration hazard:

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

Additional toxicological information:

n-Butane/Isobutane: In low concentrations may cause narcotic effects. Symptoms may include dizziness, headache, nausea and loss of co-ordination.

12 Ecological information

12.1 Toxicity	No known ecological damage caused by this product
12.2 Persistence and degradability	No data available
12.3 Bioaccumulative potential	No data available
12.4 Mobility in soil	No data available.
12.5 Results of PBT and vPvB assessment	The mixture does not meet the criteria for PBT or vPvB.
12.6 Other adverse effects	No data available.



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13 Disposal considerations

13.1 Waste treatment methods

Recommendation:

Do not discharge into areas where there is a risk of forming an explosive mixture with air. Waste gas should be flared through a suitable burner with flash back arrestor. Do not discharge into any place where its accumulation could be dangerous. Contact supplier if guidance is required.

European waste catalog

The listed (n) waste number (s) according to the European Waste Catalogue (EWC), are a recommendation. A final decision must be taken in agreement with the regional waste management company.

16 05 04* gases in pressure containers, containing hazardous substances (including halons)

Uncleaned packaging:

Recommendation: Disposal according to official regulations.

14 Transport information

14.1 UN number	UN2037
14.2 UN proper shipping name	RECEPTACLES, SMALL, CONTAINING GAS Gas cartridges (flammable), without a release device, non-refillable
14.3 Transport hazard class(es)	2
14.4 Packing group	none
14.5 Environmental hazards	none
14.6 Special precautions for user	none
14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code	Not applicable.

Other transport information

Avoid transport on vehicles where the load space is not separated from the driver's compartment. Ensure vehicle driver is aware of the potential hazards of the load and knows what to do in the event of an accident or an emergency. Before transporting product containers ensure that they are firmly secured. Ensure that the container valve is closed and not leaking. Ensure that the valve outlet cap nut or plug (where provided) is correctly fitted. Ensure that the valve protection device (where provided) is correctly fitted. Ensure adequate ventilation. Ensure compliance with applicable regulations.



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15 Regulatory information

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

EU-Regulations

None

National Regulations

Germany: Water hazard class (WGK)

non-hazardous to water (nwg), Classification according to VwVwS

15.2 Chemical safety assessment: No data available

16 Other information

Since the user's working conditions are not known by us, the information supplied on this safety data sheet is based on our current level of knowledge and on national and community regulations. The mixture must not be used for other uses than those specified in section 1 without having first obtained written handling instructions. It is at all times the responsibility of the user to take all necessary measures to comply with legal requirements and local regulations. The information in this safety data sheet must be regarded as a description of the safety requirements relating to the mixture and not as a guarantee of the properties thereof.

Revision notes

* Changes since the last version

Abbreviations

WGK : Wassergefährdungsklasse (Water Hazard Class).

Title for H and EUH indications (Number and text)

H220 - Extremely flammable gas.

H280 - Contains gas under pressure; may explode if heated.

Methods of evaluating information referred to in Article 9 of Regulation (EC) No 1272/2008 for the purpose of classification

Classification based on the components