

**Safety Data Sheet according to Regulation (EC)  
No. 1907/2006 (REACH)**

Printed 30.11.2010  
Revision 30.11.2010 (GB) Version 7.1

**Isobutane**  
2322 - 2323



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

**Product identifier**

<b>Name of product</b>	Isobutane Art-Nr.: 2322 - 2323
<b>Name of substance</b>	isobutane
<b>Index No</b>	601-004-00-0
<b>EC No</b>	200-857-2
<b>CAS No</b>	75-28-5

**Manufacturer/distributor**

GHC Gerling, Holz & Co. Handels GmbH  
Ruhrstraße 113, D-22761 Hamburg  
Phone +49 (0) 40 853 123-0, Fax +49 (0) 40 853 123-66  
  
E-Mail [msds@ghc.de](mailto:msds@ghc.de)  
Internet [www.ghc.de](http://www.ghc.de)

**Advice**

Phone +49 (0) 40 853 123-0  
Fax +49 (0) 40 853 123-66

**Emergency advice**

GHC Gerling, Holz & Co. Handels GmbH  
Phone +49 (0) 40 853 123-0

**Recommended intended purpose(s)**

Basic substance.  
Propellant.

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**2. Hazards identification**

**Classification according to 67/548/EEC or 1999/45/EC**

F+; R12

**R-phrases**

12 Extremely flammable.

**Classification according to Regulation (EC) No 1272/2008 [CLP/GHS]**

Hazard classes and Hazard categories	Hazard Statements	Classification procedure
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<b>Flam. Gas 1</b>	<b>H220</b>
<b>Liquef. Gas</b>	<b>H280</b>

**Hazard statements for physical hazards**

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

**Additional hints**

Listed substance (Regulation (EC) No 1272/2008, Annex VI, part 3).

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**Labelling according to Regulation (EC) No 1272/2008 [CLP/GHS]**



GHS02



GHS04

**Signal word**

Danger

**Hazard statements for physical hazards**

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

**Precautionary Statements**

**Prevention**

P210 Keep away from heat/sparks/open flames/hot surfaces. – No smoking.

**Response**

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

**Storage**

P403 Store in a well-ventilated place.

**Information pertaining to special dangers for human and environment**

In high concentrations may cause asphyxiation.  
Gas/vapour heavier than air. May accumulate in confined spaces, particularly at or below ground level.  
Contact with liquid may cause cold burns/frostbite.

**! 3. Composition/information on ingredients**

**CAS No 75-28-5** **isobutane**  
EC No 200-857-2  
Index No 601-004-00-0

**4. First aid measures**

**General information**

Remove contaminated soaked clothing immediately.  
Adhere to personal protective measures when giving first aid.  
Seek medical advice immediately.

**In case of inhalation**

Remove the casualty into fresh air and keep him immobile.  
Seek medical treatment immediately.  
In case of respiratory standstill give artificial respiration by respiratory bag (Ambu bag) or respirator. Send for a doctor.

**In case of skin contact**

In case of contact with skin wash off with warm water.  
In case of frostbite rinse with plenty of water. Don't remove clothing.  
In case of frostbite spray with lukewarm (not hot) water for at least 15 minutes. Apply a sterile dressing. Obtain medical assistance.

**In case of eye contact**

Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
Call for a doctor immediately.

**In case of ingestion**

Ingestion is not considered a potential route of exposure.

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**Physician's information / possible symptoms**

Shortness of breath

**Treatment (Advice to doctor)**

Monitor circulation.

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**5. Firefighting measures**

**Suitable extinguishing media**

Dry powder  
Carbon dioxide

**Extinguishing media which must not be used for safety reasons**

no

**Special hazards arising from the substance or mixture**

In case of fire formation of dangerous gases possible.

Formation of explosive gas mixtures in air.

In the event of fire the following can be released:

Carbon monoxide (CO)

**Special protective equipment for fire-fighters**

Use breathing apparatus with independent air supply ( isolated ).

Wear full protective clothing.

**Additional information**

Cool endangered containers with water spray jet.

Exposure to fire may cause containers to rupture/explode.

Do not extinguish a leaking gas flame unless absolutely necessary. Spontaneous/explosive re-ignition may occur.

Extinguish any other fire.

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**6. Accidental release measures**

**Personal precautions**

See chapter 8.

Keep away sources of ignition.

**Environmental precautions**

If possible, stop flow of product.

Eliminate ignition sources.

Do not discharge into the drains/surface waters/groundwater.

Do not discharge into the subsoil/soil.

**Methods for cleaning up**

Ensure adequate air ventilation.

Allow to vaporise.

**Additional Information**

Informations for safe handling see chapter 7.

Informations for personal protective equipment see chapter 8.

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**! 7. Handling and storage**

**! Advice on safe handling**

Use only in thoroughly ventilated areas.

Transfer and handle only in enclosed systems.

Take measures against electrostatically charging.

Barrels and installations thoroughly earthing (grounding ).

Use antistatic tools.

Treatment only in suitable rooms and systems.

Provide good room ventilation even at ground level (vapours are heavier than air).

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Prevent cylinders from falling over.  
Ensure valve protection device is correctly fitted.  
Ensure valve outlet cap nut or plug (where provided) is correctly fitted.  
Open valve slowly to avoid pressure shock.  
Do not allow backfeed into the container.  
Suck back of water into the container must be prevented.  
No water to valves, flanges and other fittings.  
Purging of pipes and valves with inert gases - to avoid: water, solvents.

**Advice on protection against fire and explosion**

The product is combustible.  
Because of risk of explosion avoid vapours getting into cellar, sewage system and holes.  
Take precautionary measures against static discharges.  
Formation of explosive gas mixtures in air.  
Use explosion-proof equipment / fittings and non-sparking tools.

**Requirements for storage rooms and vessels**

Keep in closed original container.  
Ventilate store-rooms thoroughly.  
Use transportable pressure equipment.  
Suitable materials: Normalised steel and carbon steel, tempered steel, aluminium alloys, stainless steel.  
Valve: Suitable materials: Brass, copper alloys, carbon steels, aluminium alloys, stainless steel.

**Advice on storage compatibility**

Do not store together with animal feedstuffs.  
Do not store together with food.  
Do not store together with oxidizing agents.

**Further information on storage conditions**

Ensure valve protection device is correctly fitted.  
Keep container tightly closed and store at cool and aired place.  
Prevent cylinders from falling over.  
Keep container in a well-ventilated place  
Protect of heat.  
Storage temperature may not exceed 50°C (=122°F).

**Information on storage stability**

At appropriate storage unlimited stability.

**Recommendation(s) for intended use**

no

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**8. Exposure controls/personal protection**

**Additional advice**

no

**Respiratory protection**

Keep self contained breathing apparatus readily available for emergency use.  
In case of rescue and maintenance activities in storage containers use environment-independent breathing apparatus because of risk of suffocation by edging out of air oxygen

**Hand protection**

chemical-resistant gloves  
Leather gloves

**Eye protection**

safety goggles with side protection  
safety goggles, in case of increased risk add protective face shield

**Skin protection**

antistatic boots

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**General protective measures**

Do not inhale gases/vapours/aerosols.

**Hygiene measures**

At work do not eat, drink and smoke.

**Limitation and surveillance of the environment**

See chapter 7.

**9. Physical and chemical properties**

**Form**

Gaseous / liquefied under pressure.

**Colour**

colourless

**Odour**

sweetish

**Important health, safety and environmental information**

	Value	Temperature	at	Method	Remark
<b>pH value in delivery state</b>	not applicable				
<b>Acid number</b>	not applicable				
<b>boiling point</b>	-11,7 °C		1013 hPa		
<b>melting point</b>	-159,6 °C				
<b>Flash point</b>	-83 °C				
<b>Flammable solid</b>	not applicable				
<b>Flammability (gas)</b>	460 °C				
<b>Ignition temperature</b>	460 °C				
<b>Lower explosion limit</b>	1,3 Vol-%				
<b>Upper explosion limit</b>	9,8 Vol-%				
<b>Vapour pressure</b>	3010 hPa	20 °C			
<b>Density</b>	0,594 g/cm <sup>3</sup>	-12 °C			information concerns to liquid phase
<b>Rel. vapour density</b>	2,11				
<b>Solubility in water</b>	49 mg/l	20 °C			
<b>Solubility/other</b>					soluble in organic solvent

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	Value	Temperature	at	Method	Remark
<b>Partition coefficient (log p<sub>OW</sub>)</b>	2,76				
<b>Viscosity dynamic</b>	0,174 mPa*s	285 K			
<b>Viscosit dynamic</b>	0,133 mPa*s	310 K			

**Additional information**

Vapours are heavier than air.

**10. Stability and reactivity**

**Conditions to avoid**

Formation of explosive gas/air mixtures.  
Reactions with oxidising agents.  
Heat sources / heat - risk of bursting.

**Materials to avoid**

Reactions with oxidising agents.

**Hazardous decomposition products**

No hazardous decomposition products known.

**Thermal decomposition**

Remark No decomposition if used as directed.

**Additional information**

Stable under normal conditions.

**11. Toxicological information**

**Acute toxicity/Irritability/Sensitization**

	Value/Validation	Species	Method	Remark
<b>LC50 acute inhalation</b>	520000 ppm (2 h)	rat		
<b>Irritability skin</b>		no		
<b>Irritability eye</b>		no		
<b>Skin sensitization</b>		not determined		
<b>Sensitization respiratory system</b>		not determined		

**Subacute Toxicity - Carcinogenicity**

	Value	Species	Method	Validation
<b>Mutagenicity</b>				No mutagenity, after different in-vitro studies.

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Value	Species	Method	Validation
<b>Reproduction-Toxicity</b>			not determined
<b>Carcinogenicity</b>			not determined
<b>Toxicity test (Additional information)</b> No experimental indication of genotoxicity in vitro ( Ames-test negative ).			
<b>Experiences made from practice</b> May cause frostbite. Gases have a suffocating effect. Inhalation causes narcotic effect/intoxication.			

## 12. Ecological information

### Data on elimination (persistence and degradability)

Elimination rate	Method of analysis	Method	Validation
<b>Physico-chemical degradability</b>	At normal temperature very highly volatile or gaseous product that can be released to atmosphere. Elimination test cannot be employed.		
<b>Biological degradability</b>	not determined		
<b>Biological eliminability</b>	not determined		

### Mobility and bioaccumulative potential

Because of the n-octanol/water distribution coefficient (log K o/w) accumulation in organisms is possible.

### Ecotoxicological effects

Value	Species	Method	Validation
<b>Fish</b>	not determined		
<b>Daphnia</b>	not determined		
<b>Algae</b>	not determined		
<b>Bacteria</b>	not determined		

## 13. Disposal considerations

**Waste code No.**  
16 05 04\*

**Name of waste**  
gases in pressure containers (including halons) containing dangerous substances

Wastes marked with an asterisk are considered to be hazardous waste pursuant to Directive 91/689/EEC on hazardous waste.

**Recommendations for the product**  
Dispose of as hazardous waste.

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#### Recommendations for packaging

Transportable pressure equipment (empty, residual pressure): Return to supplier / manufacturer.

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### 14. Transport information

#### Land and inland navigation transport ADR/RID

UN 1969 ISOBUTANE, 2.1, (B/D), Classification code: 2F

#### Marine transport IMDG

UN 1969 ISOBUTANE, 2.1

#### Air transport ICAO/IATA-DGR

UN 1969 Isobutane, 2.1

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### 15. Regulatory information

#### VOC standard

VOC content <=100 % 20 °C 3010 hPa

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### 16. Other information

#### Recommend uses and restrictions

National and local regulations concerning chemicals shall be observed.

#### Further information

All declarations of safety-data-sheet refer to pure substance.

The information contained herein is based on the state of our knowledge. It characterizes the product with regard to the appropriate safety precautions. It does not represent a guarantee of the properties of the product.

#### Wording of the R/H-phrases specified in chapter 3 (not the classification of the mixture!)

R 12 Extremely flammable.

H220 Extremely flammable gas.