



GHC Material safety data sheet Date: 02 October 2002

Art. no.: 2420

Version: 0001

Product: **Isobutene**

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Safety data sheet

According to EEC-directive 91/155

1. Identification of the substance / preparation and company**Isobutene****Company:**GHC Gerling, Holz & Co. Handels GmbH
Ruhrstrasse 113
22761 Hamburg
GermanyPhone: +49 (0) 40 – 853 123 – 0
Fax: +49 (0) 40 – 853 123 – 66
Email: hamburg@ghc.de**2. Composition / information on ingredients**Chemical characterizationIsobutene; 2-Methylpropene;
IsobutyleneChemical formula: C₄H₈

CAS No.: 115-11-7

EC index No.: 601-012-00-4

UN No.: 1055

EINECS No.: 204-066-3

Risk phrases: R 12

Symbols: F+ extremely flammable

3. Hazards identification

Advice on critical hazards to man and the environment:

Liquefied gas, extremely flammable

Danger of frostbite when skin comes in contact with liquefied gas

Vapours in higher concentrations may cause narcotic effects

4. First aid measures

Take off all contaminated clothing

If inhaled:

Provide fresh air. Monitor breathing. Apply artificial respiration if necessary.

On skin contact:

In the event of frostbite, rinse copiously with water. Cover with sterile dressing and seek medical advice.

On eye contact

Rinse immediately with plenty of water for 15 minutes and seek advice of an eye specialist

On ingestion:

Ingestion is not considered a potential route of exposure.

5. Fire fighting measuresSuitable extinguishing media: Water spray, CO₂, dry powder, foam

Special hazards:

In case of fire cool endangered containers with water. Closed container may rupture if strongly heated.

6. Accidental release measures

Personal precautions:

Evacuate area. Ensure adequate air ventilation. Eliminate ignition sources. No smoking. Avoid contact with skin or eyes. Do not allow to enter drains (danger of explosion)

Environmental precautions:

Keep away from drains, water and soil



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Methods for cleaning up: Confine and allow to evaporate

7. Handling and storage

Handling: Provide good ventilation or extraction. Observe special instructions applicable to compressed gases.

Protection against fire/explosion: Take precautionary measures against static charges, keep away from sources of ignition. Explosion protection equipment required.

Storage: Keep containers tightly closed. Store in well-ventilated area. Keep in a cool place. Protect container from direct sunlight. Storage classification according to VCI (D): 2 A.

8. Exposure controls / personal protection

Technical measures: Use closed-system units. If contact with gases or vapours can not be excluded: provide good ventilation or extraction

Ingredients with limiting values to be controlled: TLV (TRGS 900/D): not indicated

Industrial hygiene: Do not inhale vapours/ aerosols. Remove all contaminated clothing. Observe the rules usually applicable when handling chemicals

Respiratory protection: Wear a self-contained respiratory apparatus full mask with filter type AX (emergency gas mask)

Hand protection: Suitable protective gloves e.g. gloves of chloroprene-rubber (e.g. neoprene), heat insulating

Eye protection: Full protective suit, if necessary

9. Physical and chemical properties

Form: Liquefied gas

Colour: Colourless

Odour: Olefin-like

Change of physical state: Melting point/ melting range: -140 °C
Boiling point/ boiling range: -6.9 °C

Flash point: -80 °C DIN 51755

Critical temperature: 144.7 °C

Critical pressure: 40 bar

Vapour pressure : 1.32 bar (0 °C)
2.56 bar (20 °C)

Relative density, gas (air=1): 1.93

Density 0.617 g/cm³ (0 °C)
0.594 g/cm³ (20 °C)

Solubility in water: 0,263 g/l (20 °C)

Partition coefficient (log PoW) 2:11 (measured) (2-methylpropene)

10. Stability and reactivity

Hazardous reactions: no



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11. Toxicological information

LC 50 (inhal., rat):	620 mg/l / 4.0h (literature value)
Inhalation:	Vapours may cause narcotic effects. High concentrations in inhaled air may lead to unconsciousness and asphyxiation due to lack of oxygen
Further information:	Contact with liquid causes frost-bite

12. Ecological information

General	No data available
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13. Disposal considerations

Product:	With respect to local regulations, e.g. incineration via flare system. A waste code in accordance with the European Waste Catalogue (EWC) may not be assigned to this product since it admits of a classification only when the consumer uses it for some purpose. In agreement with the waste code must be determined regional waste disposal authority or company.
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14. Transport informationLand transport

ADR/RID	Class: 2	UN No.: 1055
	Hazard no.: 23	Item no.: 2 F
Description of the goods:	23/1055 Isobutene	

Sea transport

	Class: 2.1	UN No.: 1055
	EMS: 2-07	
Proper technical name:	Isobutene, UN-No. 1055	

Air transport

ICAO/IATA	Class: 2.1	UN/ID No.: 1055
Proper technical name:	Isobutylene	

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 and:

- Cylinder valve is closed and not leaking
- Valve outlet cap nut or plug (where provided) is correctly fitted
- Valve protection device (where provided) is correctly fitted
- There is adequate ventilation
- Compliance with applicable regulations



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15. Regulatory information

Number in Annex I of Dir 67/548/EEC:

EC classification: F+; R 12

Symbols: F+: extremely flammable

R phrases: 12

S phrases: 9-16-33

Risk phrases R 12 – Extremely flammable

Safety phrases S 9 - Keep container in well-ventilated place

S 16 – Keep away from sources of ignition – No smoking

S 33 – Take precautionary measures against static discharges

16. Other information

Ensure all national/ local regulations are observed. Ensure operators understand the flammability hazard. Contact with liquid may cause cold burns/ frost bite. The hazard of asphyxiation is often overlooked and must be stressed during operator training. Before using this product in any new process or experiment, a thorough material compatibility and safety study should be carried out.

Details given in this document are believed to be correct at the time of going to press. Whilst proper care has been taken in the preparation of this document, no liability for injury or damage resulting from its use can be accepted.