

Safety data sheet

Helium, refrigerated liquid.

Creation date : 27.01.2005
Revision date : 01.04.2011

Version : 1.3

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

1.1. Product identifier

Product name

Helium, refrigerated liquid.

EC No (from EINECS): 231-168-5

CAS No: 7440-59-7

Index-Nr. -

Chemical formula He

REACH Registration number:

Listed in Annex IV/V of Regulation (EC) No 1907/2006 (REACH), exempted from registration.

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

Relevant identified uses

Industrial and professional. Perform risk assessment prior to use.

Uses advised against

Consumer use.

1.3. Details of the supplier of the safety data sheet

Company identification

BOC, Priestley Road, Worsley, Manchester M28 2UT

E-Mail Address ReachSDS@boc.com

1.4. Emergency telephone number

Emergency phone numbers (24h): 0800 111 333

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification acc. to Regulation (EC) No 1272/2008/EC (CLP/GHS)

Press. Gas (Refrigerated liquefied gas) - Contains refrigerated gas; may cause cryogenic burns or injury.

Classification acc. to Directive 67/548/EEC & 1999/45/EC

Not classified as hazardous to health.

Asphyxiant in high concentrations.

Risk advice to man and the environment

Refrigerated liquefied gas. Contact with product may cause cold burns or frostbite.

In high concentrations may cause asphyxiation.

2.2. Label elements

- Labelling Pictograms



- Signal word

Warning

- Hazard Statements

EIGA-As

H281

Asphyxiant in high concentrations.

Contains refrigerated gas; may cause cryogenic burns or injury.

- Precautionary Statements

Precautionary Statement Prevention

P282

Wear cold insulating gloves/face shield/eye protection.

Precautionary Statement Response

P336+P315

Thaw frosted parts with lukewarm water. Do not rub affected area. Get immediate medical advice/attention.

Precautionary Statement Storage

P403

Store in a well-ventilated place.

Precautionary Statement Disposal

None.

2.3. Other hazards

None.

SECTION 3: Composition/information on ingredients

Substance / Mixture: Substance.

3.1. Substances

Helium, refrigerated liquid.

CAS No: 7440-59-7

Index-Nr.: -

EC No (from EINECS): 231-168-5

REACH Registration number:

Listed in Annex IV/V of Regulation (EC) No 1907/2006 (REACH), exempted from registration.

Contains no other components or impurities which will influence the classification of the product.

3.2. Mixtures

Not applicable.

SECTION 4: First aid measures

4.1. Description of first aid measures

First Aid General Information:

Remove victim to uncontaminated area wearing self contained breathing apparatus. Keep victim warm and rested. Call a doctor. Apply artificial respiration if breathing stopped.

First Aid Inhalation:

Remove victim to uncontaminated area wearing self contained breathing apparatus. Keep victim warm and rested. Call a doctor. Apply artificial respiration if breathing stopped.

First Aid Skin / Eye:

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

First Aid Ingestion:

Ingestion is not considered a potential route of exposure.

4.2. Most important symptoms and effects, both acute and delayed

In high concentrations may cause asphyxiation. Symptoms may include loss of mobility/consciousness. Victim may not be aware of asphyxiation.

4.3. Indication of any immediate medical attention and special treatment needed

None.

SECTION 5: Fire fighting measures

5.1. Extinguishing media

Suitable extinguishing media

All known extinguishants can be used.

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5.2. Special hazards arising from the substance or mixture

Specific hazards

Exposure to fire may cause containers to rupture/explode. Non flammable.

Hazardous combustion products

None.

5.3. Advice for fire-fighters

Specific methods

If possible, stop flow of product. Move container away or cool with water from a protected position. If leaking do not spray water onto container. Water surrounding area (from protected position) to contain fire.

Special protective equipment for fire-fighters

In confined space use self-contained breathing apparatus.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Evacuate area. Use protective clothing. Wear self-contained breathing apparatus when entering area unless atmosphere is proved to be safe. Ensure adequate air ventilation. Prevent from entering sewers, basements and workpits, or any place where its accumulation can be dangerous.

6.2. Environmental precautions

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

6.3. Methods and material for containment and cleaning up

Ventilate area. Liquid spillages can cause embrittlement of structural materials.

6.4. Reference to other sections

See also sections 8 and 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Suck back of water into the container must be prevented. Do not allow backfeed into the container. Use only properly specified equipment which is suitable for this product, its supply pressure and temperature. Contact your gas supplier if in doubt. Refer to supplier's handling instructions. The substance must be handled in accordance with good industrial hygiene and safety procedures. Do not smoke while handling product. Only experienced and properly instructed persons should handle gases under pressure. Protect cylinders from physical damage; do not drag, roll, slide or drop. Never use direct flame or electrical heating devices to raise the pressure of a container. Do not remove or deface labels provided by the supplier for the identification of the cylinder contents. When moving cylinders, even for short distances, use a cart (trolley, hand truck, etc.) designed to transport cylinders. Leave valve protection caps in place until the container has been secured against either a wall or bench or placed in a container stand and is ready for use. Ensure the complete gas system has been (or is regularly) checked for leaks before use. If user experiences any difficulty operating cylinder valve discontinue use and contact supplier. Close container valve after each use and when empty, even if still connected to equipment. Never attempt to repair or modify container valves or safety relief devices. Damaged valves should be reported immediately to the supplier. Replace valve outlet caps or plugs and container caps where supplied as soon as container is disconnected from equipment. Keep container valve outlets clean and free from

contaminates particularly oil and water. Never attempt to transfer gases from one cylinder/container to another.

7.2. Conditions for safe storage, including any incompatibilities

Keep container below 50°C in a well ventilated place. Observe all regulations and local requirements regarding storage of containers. Containers should not be stored in conditions likely to encourage corrosion. Containers should be stored in the vertical position and properly secured to prevent falling over. Stored containers should be periodically checked for general conditions and leakage. Container valve guards or caps should be in place. Store containers in location free from fire risk and away from sources of heat and ignition. Keep away from combustible materials.

7.3. Specific end use(s)

None.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

No occupational exposure limit.

8.2. Exposure controls

Appropriate engineering controls

Product to be handled in a closed system. Oxygen detectors should be used when asphyxiating gases may be released. The substance must be handled in accordance with good industrial hygiene and safety procedures. Consider work permit system e.g. for maintenance activities. Systems under pressure should be regularly checked for leakages. Provide adequate general or local ventilation.

Personal protective equipment

Eye and face protection

Safety eyewear, goggles or face shield to EN166 should be used to avoid exposure to liquid splashes.

Skin protection

Hand protection

Advice:

EN 511 Protective gloves against cold.

Body protection

Protect eyes, face and skin from contact with product.

Other protection

Wear cold insulating gloves.

Respiratory protection

Not required

Thermal hazards

If there is a risk of contact with the liquid, all protective equipment should be suitable for extremely low temperatures.

Environmental Exposure Controls

Specific risk management measures are not required beyond good industrial hygiene and safety procedures. Refer to local regulations for restriction of emissions to the atmosphere. See section 13 for specific methods for waste gas treatment.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

General information

Appearance/Colour: Colourless liquid.

Odour: None.

Melting point: -272,2 °C

Boiling point: -269 °C

Flash point: Not applicable for gases and gas mixtures.

Flammability range: Not applicable.

Relative density, gas: 0,14

Solubility in water: 1,5 mg/l

Autoignition temperature: Not applicable.

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Explosive properties:

Explosive acc. EU legislation: Not explosive.

Explosive acc. transp. reg.: Not explosive.

Oxidising properties: Not applicable.

Molecular weight: 4 g/mol

Critical temperature: -268 °C

Relative density, liquid: 0,12

9.2. Other information

Do not discharge into any place where its accumulation could be dangerous.

SECTION 10: Stability and reactivity

10.1. Reactivity

Unreactive under normal conditions.

10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

None.

10.4. Conditions to avoid

None.

10.5. Incompatible materials

Cryogenic liquids can cause embrittlement of some metals and alter the physical properties of other materials. No reaction with any common materials in dry or wet conditions.

10.6. Hazardous decomposition products

Under normal conditions of storage and use, hazardous decomposition products should not be produced.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

General

No known toxicological effects from this product.

SECTION 12: Ecological information

12.1. Toxicity

Can cause frost damage to vegetation.

12.2. Persistence and degradability

Not applicable.

12.3. Bioaccumulative potential

Not applicable.

12.4. Mobility in soil

The substance is a gas, not applicable.

12.5. Results of PBT and vPvB assessment

Not classified as PBT or vPvB.

12.6. Other adverse effects

Can cause frost damage to vegetation.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Do not discharge into any place where its accumulation could be dangerous. Contact supplier if guidance is required. Vent to atmosphere in a well ventilated place. Consult supplier for specific recommendations.

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SECTION 14: Transport information

ADR/RID

14.1. UN number

1963

14.2. UN proper shipping name

Helium, refrigerated, liquid

14.3. Transport hazard class(es)

Class: 2

Classification Code: 3A

Labels: 2.2

Hazard number: 22

Emergency Action Code: 2T

14.4. Packing group (Packing Instruction)

P203

14.5. Environmental hazards

None.

14.6. Special precautions for user

None.

IMDG

14.1. UN number

1963

14.2. UN proper shipping name

Helium, refrigerated, liquid

14.3. Transport hazard class(es)

Class: 2.2

Labels: 2.2

EmS: FC, SV

14.4. Packing group (Packing Instruction)

P203

14.5. Environmental hazards

None.

14.6. Special precautions for user

None.

14.7. Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code

Not applicable.

IATA

14.1. UN number

1963

14.2. UN proper shipping name

Helium, refrigerated, liquid

14.3. Transport hazard class(es)

Class: 2.2

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Labels: 2.2

14.4. Packing group (Packing Instruction)

P202

14.5. Environmental hazards

None.

14.6. Special precautions for user

None.

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 adequate ventilation. Ensure compliance with applicable regulations.

SECTION 15: Regulatory information

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

Seveso Directive 96/82/EC: Not covered.

15.2. Chemical safety assessment

A CSA does not need to be carried out for this product.

SECTION 16: Other information

Ensure all national/local regulations are observed. 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.

Advice

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. Details given in this document are believed to be correct at the time of going to press.

Further information

Note:

When using this document care should be taken, as the decimal sign and its position complies with rules for the structure and drafting of international standards, and is a comma on the line. As an example 2,000 is two (to three decimal places) and not two thousand, whilst 1.000 is one thousand and not one (to three decimal places).

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