

Safety data sheet Oxygen, compressed.

Creation date : 27.01.2005
Revision date : 07.02.2012

Version : 2.1

DE / E

SDS No. : 8340
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1 IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY

Product name

Oxygen, compressed.
EC No (from EINECS): 231-956-9
CAS No: 7782-44-7
Index-Nr. 008-001-00-8
Chemical formula O₂

REACH Registration number:

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

Known uses

Not known.

Company identification

Linde AG, Linde Gas Division, Seitnerstraße 70, D-82049 Pullach
E-Mail Address Info@de.linde-gas.com
Emergency phone numbers (24h): 089-7446-0

2 HAZARDS IDENTIFICATION

Classification of the substance or mixture

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

Press. Gas (Compressed gas) - Contains gas under pressure; may explode if heated.

Ox. Gas 1 - May cause or intensify fire; oxidiser.

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

O; R8

Contact with combustible material may cause fire.

Risk advice to man and the environment

Compressed gas.

Label Elements

- Labelling Pictograms



- Signal word

Danger

- Hazard Statements

H280 Contains gas under pressure; may explode if heated.
H270 May cause or intensify fire; oxidiser.

- Precautionary Statements

Precautionary Statement Prevention

P220 Keep away from combustible materials.
P244 Keep valves and fittings free from oil and grease.

Precautionary Statement Response

P370 + P376 In case of fire: Stop leak if safe to do so.

Precautionary Statement Storage

P403 Store in a well-ventilated place.

Precautionary Statement Disposal

None.

3 COMPOSITION/INFORMATION ON INGREDIENTS

Substance/Preparation: Substance.

Components/Impurities

Oxygen, compressed.

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

4 FIRST AID MEASURES

Inhalation

Continuous inhalation of concentrations higher than 75% may cause nausea, dizziness, respiratory difficulty and convulsion. Remove victim to uncontaminated area wearing self contained breathing apparatus. Keep victim warm and rested. Call a doctor. Apply artificial respiration if breathing stopped.

Ingestion

Ingestion is not considered a potential route of exposure.

5 FIRE FIGHTING MEASURES

Specific hazards

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

Hazardous combustion products

None.

Suitable extinguishing media

All known extinguishants can be used.

Specific methods

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

Special protective equipment for fire-fighters

Normal firefighters' equipment consists of an appropriate SCBA (open-circuit positive pressure compressed air type) in combination with fire kit. Equipment and clothing to the following standards will provide a suitable level of protection for firefighters.

6 ACCIDENTAL RELEASE MEASURES

Personal precautions

Evacuate area. Ensure adequate air ventilation. Prevent from entering sewers, basements and workpits, or any place where its accumulation can be dangerous. Eliminate ignition sources. Monitor concentration of released product.

Environmental precautions

Try to stop release.

Clean up methods

Ventilate area.

7 HANDLING AND STORAGE

Handling

Use no oil or grease. Suck back of water into the container must be prevented. Use only properly specified equipment which is suitable for this product, its supply pressure and temperature. Contact your gas supplier if in doubt. Keep away from ignition sources (including static discharges). Refer to supplier's handling instructions. Purge system with dry inert gas (e.g. helium or nitrogen) before gas is introduced and when system is placed out of service. Use only with

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equipment cleaned for oxygen service and rated for cylinder pressure. Do not smoke while handling product. Only experienced and properly instructed persons should handle gases under pressure. Protect containers 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 container contents. When moving containers, even for short distances, use appropriate equipment eg. trolley, hand truck, fork truck etc. 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 container 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 contaminants particularly oil and water. Never attempt to transfer gases from one container to another. Use only oxygen approved lubricants and oxygen approved sealings. Keep equipment free from oil and grease. Open valve slowly to avoid pressure shock. Do not allow backfeed into the container. The substance must be handled in accordance with good industrial hygiene and safety procedures. Lines, which are attached directly to oxygen cylinders or oxygen bundles, should consist of metal. Hoses from rubber or plastics are fire-endangered with oxygen pressures over 30 bar.

Storage

Secure cylinders to prevent them from falling. Segregate from flammable gases and other flammable materials in store. 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. Cylinders 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. Observe "Technische Regeln Druckgase (TRG) 280 Ziffer 5"

8 EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure limit value

Value type	value	Note
Respiratory protection	Not required	
Hand protection		
Advice	Wear working gloves and safety shoes while handling containers.	
Personal protection	Do not smoke while handling product. Wear suitable hand, body and head protection. Wear goggles with suitable filter lenses when use is cutting/welding. Avoid oxygen rich (>23%) atmospheres. Ensure adequate ventilation.	

Respiratory protection

Not required

Hand protection

Advice

Wear working gloves and safety shoes while handling containers.

Personal protection

Do not smoke while handling product. Wear suitable hand, body and head protection. Wear goggles with suitable filter lenses when use is cutting/welding. Avoid oxygen rich (>23%) atmospheres. Ensure adequate ventilation.

9 PHYSICAL AND CHEMICAL PROPERTIES

General information

Appearance/Colour: Colourless gas.

Odour: None.

Important information on environment, health and safety

Molecular weight: 32 g/mol

Melting point: -219 °C

Boiling point: -183 °C

Critical temperature: -118 °C

Flash point: Not applicable for gases and gas mixtures.

Autoignition temperature: Not applicable.

Flammability range: Non flammable.

Relative density, gas (Air=1): 1,1

Relative density, liquid (Water=1): 1,1

Vapour Pressure 20 °C: Not applicable.

Solubility in water: 39 mg/l

Other data

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

10 STABILITY AND REACTIVITY

Stability and reactivity

May react violently with combustible materials. May react violently with reducing agents. Violently oxidises organic material.

Hazardous decomposition products

Statements on decomposition

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

11 TOXICOLOGICAL INFORMATION

General

No known toxicological effects from this product.

Acute toxicity

After the "conventional computation method of the EC/1999/45" classified.

12 ECOLOGICAL INFORMATION

General

No ecological damage caused by this product.

13 DISPOSAL CONSIDERATIONS

General

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. Refer to the EIGA code of practice (Doc.30 "Disposal of Gases", downloadable at <http://www.eiga.org>) for more guidance on suitable disposal methods.

Gases in pressure containers (including halons) containing dangerous substances

EWC Nr. 16 05 04*

14 TRANSPORT INFORMATION

ADR/RID

Class	2	Classification Code	10
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UN number and proper shipping name

UN 1072 Oxygen, compressed			
UN 1072 Oxygen, compressed			
Labels	2.2, 5.1	Hazard number	25

Packing Instruction	P200
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IMDG

Class 2.2
UN number and proper shipping name
UN 1072 Oxygen, compressed
Labels 2.2,
5.1
Packing Instruction P200
EmS F-C

IATA

Class 2.2
UN number and proper shipping name
UN 1072 Oxygen, compressed
Labels 2.2,
5.1
Packing Instruction P200

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.

15 REGULATORY INFORMATION**Further national regulations**

Council Directive 89/391/EEC on the introduction of measures to encourage improvements in the safety and health of workers at work
Directive 94/9/EC on equipment and protective systems intended for use in potentially explosive atmospheres (ATEX)

Directive 89/686/EEC on personal protective equipment

Council Directive 67/548/EEC on the approximation of laws, regulations and administrative provisions relating to the classification, packaging and labelling of dangerous substances

Directive 1999/45/EC concerning the approximation of the laws, regulations and administrative provisions of the Member States relating to the classification, packaging and labelling of dangerous preparations

Directive 97/23/EC on the approximation of the laws of the Member States concerning pressure equipment.

Water pollution class

Not polluting to waters according to VwVwS from 27.07.2005.

TA-Luft

Not classified according to TA-Luft.

16 OTHER INFORMATION

Ensure all national/local regulations are observed. Before using this product in any new process or experiment, a thorough material compatibility and safety study should be carried out. Ensure operators understand the hazard of oxygen enrichment.

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

Linde safety advice

No. 4 Oxygen enrichment
No. 7 Safe handling of gas cylinders and cylinder bundles
No. 11 Transport of gas receptacles in vehicles

End of document