

# Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830  
according to Guideline 75/324/EWG with its amendment Guideline 2013/10/EU

## Oxygen (CANgas)

Date of issue: 02/06/2015

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Revision date: 25/01/2017

Version: 0.3

SDS reference: D-O2-097A-DD

**Warning**



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

#### 1.1. Product identifier

Trade name : Oxygen (CANgas)  
SDS no : D-O2-097A-DD  
Chemical description : Oxygen  
CAS No : 7782-44-7  
EC No : 231-956-9  
EC Index No : 008-001-00-8  
Registration-No. : Listed in Annex IV / V REACH, exempted from registration.  
Chemical formula : O<sub>2</sub>

#### 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.  
Test gas/Calibration gas.  
Contact supplier for more information on uses.  
Uses advised against : Consumer use. In medicine

#### 1.3. Details of the supplier of the safety data sheet

Company identification : Messer Industriegase GmbH  
Messer- Platz 1  
D - 65812 Bad Soden a. Ts., Germany  
0049-(0)-6196 7760-200  
www.messer.de  
info.de@messergroup.com

#### 1.4. Emergency telephone number

Emergency telephone number : Messer Industriegase GmbH +49 (0) 5341 21-9333

### SECTION 2: Hazards identification

#### 2.1. Classification of the substance or mixture

##### Classification according to Regulation (EC) No. 1272/2008 [CLP]

Physical hazards Aerosol 3 H229  
Ox. Gas 1 H270

Full text of H-statements see section 16.

#### 2.2. Label elements

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

Hazard pictograms (CLP) :



GHS04

GHS03

Signal word (CLP) :

Warning

Hazard statements (CLP) :

H270 - May cause or intensify fire; oxidizer.  
H229 - Pressurised container: May burst if heated.

Precautionary statements (CLP)

- General : P102 - Keep out of reach of children.
- Prevention : P220 - Keep away from combustible materials.  
P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.  
P251 - Do not pierce or burn, even after use.  
P244 - Keep valves and fittings free from oil and grease.
- Response : P370+P376 - In case of fire: stop leak if safe to do so.
- Storage : P403 - Store in a well-ventilated place.  
P410+P412 - Protect from sunlight. Do not expose to temperatures exceeding 50 °C/122 °F.

**2.3. Other hazards**

: None.

**SECTION 3: Composition/information on ingredients**

**3.1. Substances**

Name	Product identifier	%	Classification according to Regulation (EC) No. 1272/2008 [CLP]
Oxygen	(CAS No) 7782-44-7 (EC No) 231-956-9 (EC Index No) 008-001-00-8 (Registration-No.) *1	100	Aerosol 3, H229 Ox. Gas 1, H270

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

\*1: Listed in Annex IV / V REACH, exempted from registration.

\*2: Registration deadline not expired.

\*3: Registration not required: Substance manufactured or imported < 1t/y.

Full text of H-statements see section 16.

**3.2. Mixtures** : Not applicable

**SECTION 4: First aid measures**

**4.1. Description of first aid measures**

- Inhalation : Remove victim to uncontaminated area.
- Skin contact : Adverse effects not expected from this product.
- Eye contact : Adverse effects not expected from this product.
- Ingestion : Ingestion is not considered a potential route of exposure.

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

: Continuous inhalation of concentrations higher than 75% may cause nausea, dizziness, respiratory difficulty and convulsion.

**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 : Water spray or fog.

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

Specific hazards : Supports combustion.

Hazardous combustion products : None.

**5.3. Advice for firefighters**

Specific methods : Use fire control measures appropriate for the surrounding fire. Exposure to fire and heat radiation may cause gas receptacles to rupture. Cool endangered receptacles with water spray jet from a protected position. Prevent water used in emergency cases from entering sewers and drainage systems.  
If possible, stop flow of product.  
Use water spray or fog to knock down fire fumes if possible.

Special protective equipment for fire fighters : Standard protective clothing and equipment (Self Contained Breathing Apparatus) for fire fighters.

**SECTION 6: Accidental release measures****6.1. Personal precautions, protective equipment and emergency procedures**

: Try to stop release.  
Evacuate area.  
Monitor concentration of released product.  
Eliminate ignition sources.  
Ensure adequate air ventilation.  
Prevent from entering sewers, basements and workpits, or any place where its accumulation can be dangerous.  
Act in accordance with local emergency plan.  
Stay upwind.

**6.2. Environmental precautions**

: None.

**6.3. Methods and material for containment and cleaning up**

: Ventilate area.

**6.4. Reference to other sections**

: See also sections 8 and 13.

**SECTION 7: Handling and storage****7.1. Precautions for safe handling**

- Safe use of the product : The product must be handled in accordance with good industrial hygiene and safety procedures.  
Only experienced and properly instructed persons should handle gases under pressure.  
Consult supplier for specific recommendations.  
Consider pressure relief device(s) in gas installations.  
Ensure the complete gas system was (or is regularly) checked for leaks before use.  
Do not smoke while handling product.  
Use no oil or grease.  
Use only properly specified equipment which is suitable for this product, its supply pressure and temperature. Contact your gas supplier if in doubt.  
Use only oxygen approved lubricants and oxygen approved sealings.  
Use only with equipment cleaned for oxygen service and rated for cylinder pressure.  
Do not breathe gas.  
Avoid release of product into atmosphere.
- Safe handling of the gas receptacle : Protect cylinders from physical damage.  
If user experiences any difficulty operating cylinder valve discontinue use and contact supplier.  
Replace valve outlet caps or plugs and container caps where supplied as soon as container is disconnected from equipment.  
Keep valve outlets clean and free from contaminants particularly oil and water.  
Do not remove or deface labels provided by the supplier for the identification of the cylinder contents.

### 7.2. Conditions for safe storage, including any incompatibilities

- : Container valve guards or caps should be in place.  
Containers should be stored in the vertical position and properly secured to prevent them from falling over.  
Stored containers should be periodically checked for general condition and leakage.  
Keep container below 50°C in a well ventilated place.  
Segregate from flammable gases and other flammable materials in store.  
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

OEL (Occupational Exposure Limits) : No data available.

DNEL (Derived-No Effect Level) : No data available.

PNEC (Predicted No-Effect Concentration) : No data available.

### 8.2. Exposure controls

#### **8.2.1. Appropriate engineering controls**

- : Provide adequate general and local exhaust ventilation.  
Systems under pressure should be regularly checked for leakages.  
Avoid oxygen rich (>23,5%) atmospheres.  
Gas detectors should be used when oxidising gases may be released.  
Consider the use of a work permit system e.g. for maintenance activities.

#### **8.2.2. Individual protection measures, e.g. personal protective equipment**

- : Ensure adequate ventilation.  
PPE compliant to the recommended EN/ISO standards should be selected.
- Eye/face protection : Wear safety glasses with side shields.
  - Skin protection
    - Hand protection : No additional information available
    - Other : No additional information available

- Respiratory protection : None necessary.
- Thermal hazards : None necessary.

**8.2.3. Environmental exposure controls**

: None necessary.

**SECTION 9: Physical and chemical properties****9.1. Information on basic physical and chemical properties**

## Appearance

- Physical state at 20°C / 101.3kPa : Gas.
- Colour : Colourless.

Odour : No odour warning properties.

Odour threshold : Odour threshold is subjective and inadequate to warn of overexposure.

pH value : Not applicable.

Molar mass : 32 g/mol

Melting point : -219 °C

Boiling point : -183 °C

Flash point : Not applicable for gases and gas mixtures.

Critical temperature [°C] : -118 °C

Evaporation rate (ether=1) : Not applicable for gases and gas mixtures.

Flammability range : Non flammable.

Vapour pressure [20°C] : Not applicable.

Vapour pressure [50°C] : Not applicable.

Relative density, gas (air=1) : 1.1

Relative density, liquid (water=1) : 1.1

Solubility in water : 39 mg/l

Partition coefficient n-octanol/water [log Kow] : Not applicable for inorganic gases.

Auto-ignition temperature : Not applicable.

Viscosity [20°C] : Not applicable.

Explosive Properties : Not applicable.

Oxidising Properties : Oxidiser.

- Coefficient of oxygen equivalency (Ci) : 1

**9.2. Other information**

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

**SECTION 10: Stability and reactivity****10.1. Reactivity**

: May intensify fire; oxidiser

**10.2. Chemical stability**

: Stable under normal conditions.

**10.3. Possibility of hazardous reactions**

: Violently oxidises organic material.

**10.4. Conditions to avoid**

: None under recommended storage and handling conditions (see section 7).

**10.5. Incompatible materials**

: May react violently with reducing agents.  
May react violently with combustible materials.  
Keep equipment free from oil and grease.  
For additional information on compatibility refer to ISO 11114.

**10.6. Hazardous decomposition products**

: None.

**SECTION 11: Toxicological information**

**11.1. Information on toxicological effects**

**Acute toxicity** : No known toxicological effects from this product.  
**Skin corrosion/irritation** : No known effects from this product.  
**Serious eye damage/irritation** : No known effects from this product.  
**Respiratory or skin sensitisation** : No known effects from this product.  
**Germ cell mutagenicity** : No known effects from this product.  
**Carcinogenicity** : No known effects from this product.  
**Toxic for reproduction : Fertility** : No known effects from this product.  
**Toxic for reproduction : unborn child** : No known effects from this product.  
**STOT-single exposure** : No known effects from this product.  
**STOT-repeated exposure** : No known effects from this product.  
**Aspiration hazard** : Not applicable for gases and gas mixtures.

**SECTION 12: Ecological information**

**12.1. Toxicity**

Assessment : No ecological damage caused by this product.

**12.2. Persistence and degradability**

Assessment : No ecological damage caused by this product.

**12.3. Bioaccumulative potential**

Assessment : No ecological damage caused by this product.

**12.4. Mobility in soil**

Assessment : No ecological damage caused by this product.

**12.5. Results of PBT and vPvB assessment**

Assessment : Not classified as PBT or vPvB.

**12.6. Other adverse effects**

Effect on the ozone layer : None.  
Effect on global warming : None.

**SECTION 13: Disposal considerations**

**13.1. Waste treatment methods**

List of hazardous waste codes (from Commission Decision 2001/118/EC) : May be vented to atmosphere in a well ventilated place.  
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.  
: No additional information available

**13.2. Additional information**

: None.

**SECTION 14: Transport information**

**14.1. UN number**

UN-No. : 1950

**14.2. UN proper shipping name**

Transport by road/rail (ADR/RID) : AEROSOLS, oxidizing

Transport by air (ICAO-TI / IATA-DGR) : Aerosols, non-flammable, oxidizing

Transport by sea (IMDG) : AEROSOLS

**14.3. Transport hazard class(es)**

**Labelling**



2.2 : Non flammable, non-toxic gases  
5.1 : Oxidizing substances

**Transport by road/rail (ADR/RID)**

Class : 2  
Classification code : 5O  
Tunnel Restriction : E - Passage forbidden through tunnels of category E

**Transport by air (ICAO-TI / IATA-DGR)**

Class / Div. (Sub. risk(s)) : 2.2 (5.1)

**Transport by sea (IMDG)**

Class / Div. (Sub. risk(s)) : 2.2 (5.1)  
Emergency Schedule (EmS) - Fire : F-D  
Emergency Schedule (EmS) - Spillage : S-U

**14.4. Packing group**

Transport by road/rail (ADR/RID) : Not applicable  
Transport by air (ICAO-TI / IATA-DGR) : Not applicable  
Transport by sea (IMDG) : Not applicable

**14.5. Environmental hazards**

Transport by road/rail (ADR/RID) : None.  
Transport by air (ICAO-TI / IATA-DGR) : None.

Transport by sea (IMDG) : None.

**14.6. Special precautions for user**

**Packing Instruction(s)**

Transport by road/rail (ADR/RID) : P207,LP02

Transport by air (ICAO-TI / IATA-DGR)

Passenger and Cargo Aircraft : 203

Cargo Aircraft only : 203

Transport by sea (IMDG) : P207, LP02

Special transport precautions : 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 there is adequate ventilation.  
- Ensure that containers are firmly secured.  
- Ensure cylinder valve is closed and not leaking.  
- Ensure valve outlet cap nut or plug (where provided) is correctly fitted.  
- Ensure valve protection device (where provided) is correctly fitted.

**14.7. Transport in bulk according to Annex II of Marpol and the IBC Code**

: Not applicable.

**SECTION 15: Regulatory information**

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

**EU-Regulations**

Restrictions on use : None.

Seveso Directive : 2012/18/EU (Seveso III) : Listed.

**National regulations**

National legislation : Ensure all national/local regulations are observed.

Water hazard class (WGK) : nwg - Non-hazardous to water

Kenn-Nr. : 743

**15.2. Chemical safety assessment**

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

**SECTION 16: Other information**

Indication of changes : Revised safety data sheet in accordance with commission regulation (EU) No 2015/830 and according to Guideline 75/324/EWG with its amendment Guideline 2013/10/EU.

Training advice : Ensure operators understand the hazard of oxygen enrichment.

Further information : This Safety Data Sheet has been established in accordance with the applicable European Union legislation.

Full text of H- and EUH-statements

Aerosol 3	Aerosol, Category 3
Ox. Gas 1	Oxidising Gases, Category 1
H229	Pressurised container: May burst if heated
H270	May cause or intensify fire; oxidizer



DISCLAIMER OF LIABILITY

: 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.

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