

# Safety Data Sheet

FO-20, FO-25

according to the REACH Regulation (EC) 1907/2006 amended by Regulation (EU) 2020/878  
SDS Reference Number: AWO022  
Issue date: 8/11/2025 Revision date: 8/11/2025 Supersedes version of: 2/16/2024 Version: 2.3

## Danger



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

### 1.1. Product identifier

SDS no : AWO022  
UFI : UF00-Y0XU-300S-47W7

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

Relevant identified uses : Industrial and professional uses. Perform risk assessment prior to use.  
Test gas/Calibration gas.  
Laboratory use.  
Contact supplier for more information on uses.

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

Woikoski Oy  
PL1  
52020 Woikoski, Finland  
Finland  
T +358 40 166 2023  
[asiakaspalvelu@woikoski.fi](mailto:asiakaspalvelu@woikoski.fi), [www.woikoski.fi](http://www.woikoski.fi)

### 1.4. Emergency telephone number

Country/Area	Organisation/Company	Address	Emergency number	Comment
	Myrkytystietokeskus Giftinformationscentralen, Poison Information Centre	P.O.B 790 (Tukholmankatu 17) HUS SF - 00029 Helsinki	+358 9 471 977	

## SECTION 2: Hazards identification

### 2.1. Classification of the substance or mixture

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

Physical hazards      Oxidising Gases, Category 1      H270  
Gases under pressure : Compressed gas      H280

### 2.2. Label elements

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

Hazard pictograms (CLP) :



GHS03

GHS04

Signal word (CLP) :

Danger

Hazard statements (CLP) :

H270 - May cause or intensify fire; oxidiser.

H280 - Contains gas under pressure; may explode if heated.



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Precautionary statements (CLP)

- Storage : P403 - Store in a well-ventilated place.

## 2.3. Other hazards

None.

## SECTION 3: Composition/information on ingredients

### 3.1. Substances

Not applicable

### 3.2. Mixtures

Name	Product identifier	%	Classification according to Regulation (EC) No. 1272/2008 [CLP] ATE, EUH-statements, M-Factors
oxygen	CAS-No.: 7782-44-7 EC-No.: 231-956-9 EC Index-No.: 008-001-00-8 REACH-no: *1	75 – 80	Ox. Gas 1, H270 Press. Gas (Comp.), H280
Carbon dioxide	CAS-No.: 124-38-9 EC-No.: 204-696-9 EC Index-No.: --- REACH-no: *1	20 – 25	Press. Gas (Liq.), H280

Full text of H- and EUH-statements: see section 16

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

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

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

## SECTION 4: First aid measures

### 4.1. Description of first aid measures

- Inhalation : Adverse effects not expected from this product.  
- 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

See section 11.

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

None.

## SECTION 5: Firefighting measures

### 5.1. Extinguishing media

- Suitable extinguishing media : Water spray or fog.  
- Unsuitable extinguishing media : Do not use water jet to extinguish.

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

Specific hazards : Supports combustion.  
Exposure to fire may cause containers to rupture/explode.  
Hazardous combustion products : None.

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## **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.  
Standard EN 469 - Protective clothing for firefighters. Standard - EN 659: Protective gloves for firefighters.  
Standard EN 137 - Self-contained open-circuit compressed air breathing apparatus with full face mask.

## **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.

### **6.2. Environmental precautions**

- Try to stop release.

### **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.  
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.  
Keep equipment free from oil and grease. For more guidance, refer to the EIGA Doc. 33 - Cleaning of Equipment for Oxygen Service downloadable at <http://www.eiga.eu>.  
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.

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Safe handling of the gas receptacle

- : Open valve slowly to avoid pressure shock.
- Refer to supplier's container handling instructions.
- Do not allow backfeed into the container.
- Protect containers from physical damage; do not drag, roll, slide or drop.
- 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.
- If user experiences any difficulty operating valve discontinue use and contact supplier.
- Never attempt to repair or modify container valves or safety relief devices.
- Damaged valves should be reported immediately to the supplier.
- Keep container valve outlets clean and free from contaminants particularly oil and water.
- Replace valve outlet caps or plugs and container caps where supplied as soon as container is disconnected from equipment.
- Close container valve after each use and when empty, even if still connected to equipment.
- Never attempt to transfer gases from one cylinder/container to another.
- 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 content of the container.
- Containers should be stored in the vertical position and properly secured to prevent them from falling over.

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

- Observe all regulations and local requirements regarding storage of containers.
- Containers should not be stored in conditions likely to encourage corrosion.
- 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

Carbon dioxide (124-38-9)	
Finland - Occupational Exposure Limits	
Local name	Hilidioksidi
HTP (OEL TWA)	9100 mg/m <sup>3</sup>
	5000 ppm
Regulatory reference	HTP-ARVOT 2020 (Sosiaali- ja terveysministeriö)

### 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.
- Ensure exposure is below occupational exposure limits (where available).
- 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

- A risk assessment should be conducted and documented in each work area to assess the risks related to the use of the product and to select the PPE that matches the relevant risk. The following recommendations should be considered:  
PPE compliant to the recommended EN/ISO standards should be selected.
- Eye/face protection : Wear safety glasses with side shields.  
Standard EN 166 - Personal eye-protection - specifications.
  - Skin protection : Wear working gloves when handling gas containers.  
Standard EN 388 - Protective gloves against mechanical risk, performance level 1 or higher.  
: Consider the use of flame resistant safety clothing.  
Standard EN ISO 14116 - Limited flame spread materials.  
Wear safety shoes while handling containers.  
Standard EN ISO 20345 - Personal protective equipment - Safety footwear.
  - Respiratory protection : Standard EN 137 - Self-contained open-circuit compressed air breathing apparatus with full face mask.  
Self contained breathing apparatus (SCBA) or positive pressure airline with mask are to be used in oxygen-deficient atmospheres.
  - Thermal hazards : None necessary.

### 8.2.3. Environmental exposure controls

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

Appearance	
- Physical state at 20°C / 101.3kPa	: Gas.
- Colour	: Colourless.
Odour	: Odourless.
Melting point / Freezing point	: Not applicable for gas mixtures.
Boiling point	: Not applicable for gas mixtures. It is technically not possible to determine the boiling point or range of this mixture. Component with lowest boiling point: : oxygen -183 °C
Flammability	: Not available
Lower explosion limit	: Not available
Upper explosion limit	: Not available
Flash point	: Not applicable for gas mixtures.
Auto-ignition temperature	: Not available
Decomposition temperature	: Not available
pH	: Not applicable for gas mixtures.
Viscosity, kinematic	: Not applicable.
Water solubility [20°C]	: Mixture is partially soluble in water
Partition coefficient n-octanol/water (Log Kow)	: Not applicable for gas mixtures.
Vapour pressure [20°C]	: Not applicable.
Vapour pressure [50°C]	: Not available
Density and/or relative density	: Not applicable.
Relative vapour density (air=1)	: Lighter or similar to air.
Particle characteristics	: Not applicable.

### 9.2. Other information

#### 9.2.1. Information with regard to physical hazard classes

Explosive properties	: Not applicable.
Explosive Properties	: Not applicable for gas mixtures.
Oxidising properties	: Oxidiser.

#### 9.2.2. Other safety characteristics

Molar mass	: Not applicable for gas mixtures.
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Evaporation rate : Not applicable for gas mixtures.  
Other data : None.

## SECTION 10: Stability and reactivity

### 10.1. Reactivity

No reactivity hazard other than the effects described in sub-sections below.  
This mixture contains components with the following reactivity : Violently oxidises organic material.

### 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 combustible materials.  
May react violently with reducing agents.

### 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 hazard classes as defined in Regulation (EC) No 1272/2008

Acute toxicity	: No 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.

### 11.2. Information on other hazards

No additional information available

## SECTION 12: Ecological information

### 12.1. Toxicity

Assessment	: Classification criteria are not met.
EC50 48h - Daphnia magna	: No data available.
EC50 72h Algae	: No data available.
LC50-96 h - fish	: No data available.

### **Carbon dioxide (124-38-9)**

EC50 48h - Daphnia magna	No data available.
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## Carbon dioxide (124-38-9)

EC50 72h Algae	No data available.
LC50-96 h - fish	No data available.

## oxygen (7782-44-7)

EC50 48h - Daphnia magna	No data available.
EC50 72h Algae	No data available.
LC50-96 h - fish	No data available.

### 12.2. Persistence and degradability

Assessment : No data available.

### 12.3. Bioaccumulative potential

Assessment : No data available.

### 12.4. Mobility in soil

Assessment : No data available.

### 12.5. Results of PBT and vPvB assessment

Assessment : No data available.

### 12.6. Endocrine disrupting properties

Assessment :

### 12.7. Other adverse effects

Effect on the ozone layer : None.

Effect on global warming : Contains greenhouse gas(es).

## SECTION 13: Disposal considerations

### 13.1. Waste treatment methods

Contact supplier if guidance is required.

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

Ensure that the emission levels from local regulations or operating permits are not exceeded.

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

List of hazardous waste codes (from Commission Decision 2000/532/EC as amended) : 16 05 04 \*: Gases in pressure containers (including halons) containing hazardous substances.

### 13.2. Additional information

None.

## SECTION 14: Transport information

### 14.1. UN number or ID number

In accordance with ADR / RID / IMDG / IATA / ADN

UN-No. : 3156

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## 14.2. UN proper shipping name

Transport by road/rail (ADR/RID) : COMPRESSED GAS, OXIDIZING, N.O.S.

## 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 : 10  
Hazard identification number : 25  
Tunnel Restriction : E - Passage forbidden through tunnels of category E

## 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)

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 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. Maritime transport in bulk according to IMO instruments

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 : Contains no substance on the REACH candidate list.  
Other information, restriction and prohibition regulations : Ensure all national/local regulations are observed.  
Contains no substance subject to Regulation (EU) No 649/2012 of the European Parliament and of the Council of 4 July 2012 concerning the export and import of hazardous chemicals.  
Contains no substance subject to Regulation (EU) No 2019/1021 of the European Parliament and of the Council of 20 June 2019 on persistent organic pollutants.  
Seveso Directive : 2012/18/EU (Seveso III) : Covered.

#### National regulations

No additional information available





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## 15.2. Chemical safety assessment

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

## SECTION 16: Other information

Indication of changes	: Safety data sheet in accordance with commission regulation (EU) No 2020/878.
Training advice	: Receptacle under pressure.
Further information	: This Safety Data Sheet has been established in accordance with the applicable European Union legislation. Classification in accordance with the procedures and calculation methods of Regulation (EC) 1272/2008 (CLP).

Full text of H- and EUH-statements	
Ox. Gas 1	Oxidising Gases, Category 1
Press. Gas (Comp.)	Gases under pressure : Compressed gas
Press. Gas (Liq.)	Gases under pressure : Liquefied gas
H270	May cause or intensify fire; oxidiser.
H280	Contains gas under pressure; may explode if heated.

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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