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O : Oxidizing



2.2 : Non flammable, non toxic gas.



5.1 : Oxidizing substances.

Danger



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

1.1. Product identifier

Trade name : 21.65% to 50% oxygen in helium for offshore use
 SDS Nr : ALOS-V03

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. Laboratory use Contact supplier for more uses information

1.3. Details of the supplier of the safety data sheet

Company identification : Air Liquide UK Ltd.
 Station Road
 Coleshill
 Birmingham B46 1JY United Kingdom
 E-Mail address (competent person) : David Hopper

1.4. Emergency telephone number

Emergency telephone number : 01675 462695

SECTION 2. Hazards identification

2.1. Classification of the substance or mixture

Hazard Class and Category Code Regulation EC 1272/2008 (CLP)

• Physical hazards : Oxidizing gases - Category 1 - Danger - (CLP : Ox. Gas 1) - H270
 Gases under pressure - Compressed gas - Warning - (CLP : Press. Gas) - H280

Classification EC 67/548 or EC 1999/45

: O; R8

2.2. Label elements

Labelling Regulation EC 1272/2008 (CLP)

• Hazard pictograms



• Hazard pictograms code : GHS03 - GHS04
 • Signal word : Danger

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- **Hazard statements** : H270 - May cause or intensify fire; oxidizer.
H280 - Contains gas under pressure; may explode if heated.
- **Precautionary statements**
 - **Prevention** : P244 - Keep valves and fittings free from oil and grease
P220 - Keep away from combustible materials.
 - **Response** : P370+P376 - In case of fire : Stop leak if safe to do so.
 - **Storage** : P403 - Store in a well-ventilated place.

2.3. Other hazards

: None.

SECTION 3. Composition/information on ingredients**3.1. Substance / 3.2. Mixture****Mixture.**

Substance name	Contents	CAS No	EC No	Index No	Registration no	Classification
Oxygen	50 %	7782-44-7	231-956-9	008-001-00-8	* 1	O; R6 Ox. Gas 1 (H270) Press. Gas (H280)
Helium	50 %	7440-59-7	231-168-5	-----	* 1	Not classified (DSD/DPD) Press. Gas (H280)

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 R-phrases see chapter 16. Full text of H-statements see chapter 16

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


: Refer to section 11.

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

: None.

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SECTION 5. Fire-fighting measures

5.1. Extinguishing media

- Suitable extinguishing media : All known extinguishants can be used.

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.

5.3. Advice for fire-fighters

Specific methods : Coordinate fire measure to the surrounding fire. Cool endangered containers with water spray jet from a protected position. Do not empty contaminated fire water into drains. If possible, stop flow of product.

Special protective equipment for fire fighters : Do not enter fire area without proper protective equipment, including respiratory protection.

SECTION 6. Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

: Evacuate area.
Try to stop release.
Ensure adequate air ventilation.
Eliminate ignition sources.
Monitor concentration of released product.

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 : Use no oil or grease.
Keep equipment free from oil and grease.
Do not smoke while handling product.
Use only properly specified equipment which is suitable for this product, its supply pressure and temperature. Contact your gas supplier if in doubt.
Only experienced and properly instructed persons should handle gases under pressure.
The product must be handled in accordance with good industrial hygiene and safety procedures.
Ensure the complete gas system was (or is regularly) checked for leaks before use.

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 cylinders 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 cylinder 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.

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SECTION 7. Handling and storage (continued)

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 cylinder contents.

7.2. Conditions for safe storage, including any incompatibilities

- : Segregate from flammable gases and other flammable materials in store.
- Keep away from combustible materials.
- 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 toppling.
- Stored containers should be periodically checked for general condition 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.

7.3. Specific end use(s)

- : None.

SECTION 8. Exposure controls/personal protection

8.1. Control parameters

- DNEL: Derived no effect level** : None available.
- PNEC: Predicted no effect concentration** : None available.

8.2. Exposure controls

- 8.2.1. Appropriate engineering controls** : 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. Provide adequate general and local exhaust ventilation. Consider 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. Wear safety glasses with side shields. Wear leather safety gloves and safety shoes when handling cylinders.
- 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** : No odour warning properties.
- Odour threshold** : Odour threshold is subjective and inadequate to warn for overexposure.
- pH value** : Not applicable for gas-mixtures.
- Molar mass [g/mol]** : Not applicable for gases and gas-mixtures.



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Melting point [°C]	: Not applicable for gas-mixtures.
Boiling point [°C]	: Not applicable for gas-mixtures.
Flash point [°C]	: Not applicable for gas-mixtures.
Evaporation rate (ether=1)	: Not applicable for gas-mixtures.
Flammability range [vol% in air]	: Not applicable for gas-mixtures.
Vapour pressure [20°C]	: Not applicable.
Relative density, gas (air=1)	: Lighter or similar to air.
Solubility in water [mg/l]	: Not known, but considered to have low solubility.
Partition coefficient n-octanol/water	: Not applicable for gas-mixtures.
Viscosity at 20°C [mPa.s]	: Not applicable.
Explosive Properties	: Not applicable.

9.2. Other information

Other data : None.

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

: No reactivity hazard other than the effects described in sub-sections below.

10.2. Chemical stability

: Stable under normal conditions.

10.3. Possibility of hazardous reactions

: Violently oxidises organic material.

10.4. Conditions to avoid

: Avoid moisture in installation systems. Avoid contact with oil or grease

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 toxicological effects**

Acute toxicity	: No known toxicological effects from this product.
Rat inhalation LC50 [ppm/4h]	: No data available.
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.
Carcinogenicity	: No known effects from this product.
Germ cell mutagenicity	: 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.

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SECTION 11. Toxicological information (continued)

- 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

: No data available.

12.2. Persistence - degradability

: No data available.

12.3. Bioaccumulative potential

: No data available.

12.4. Mobility in soil

: No data available.

12.5. Results of PBT and vPvB assessment

: No data available.

12.6. Other adverse effects

- Effect on ozone layer : None.
- Effect on the global warming : No known ecological damage caused by this product.

SECTION 13. Disposal considerations

13.1. Waste treatment methods

- : Do not discharge into any place where its accumulation could be dangerous. Refer to the code of practice of EIGA (Doc. 30/10 "Disposal of Gases, downloadable at <http://www.eiga.org>) for more guidance on suitable disposal methods. Ensure that the emission levels from local regulations or operating permits are not exceeded.
- Contact supplier if guidance is required.

13.2. Additional information

: None.

SECTION 14. Transport information

- UN number : 3156
- Labelling ADR, IMDG, IATA



- 2.2 : Non flammable, non toxic gas.
- 5.1 : Oxidizing substances.

Land transport (ADR/RID)

- H.I. nr : 25
- UN proper shipping name : COMPRESSED GAS, OXIDIZING, N.O.S. (Oxygen, Helium)
- Transport hazard class(es) : 2

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SECTION 14. Transport information (continued)

Classification code : 1 O
Packing Instruction(s) : P200
Tunnel Restriction : E : Passage forbidden through tunnels of category E.

Sea transport (IMDG)

Proper shipping name : COMPRESSED GAS, OXIDIZING, N.O.S. (Oxygen, Helium)
Class : 2.2
Emergency Schedule (EmS) - Fire : F-C
Emergency Schedule (EmS) - Spillage : S-W
Packing instruction : P200

Air transport (ICAO-TI / IATA-DGR)

Proper shipping name (IATA) : COMPRESSED GAS, OXIDIZING, N.O.S. (Oxygen, Helium)
Class : 2.2
Passenger and Cargo Aircraft : Allowed.
Packing instruction - Passenger and Cargo Aircraft : 200
Cargo Aircraft only : Allowed.
Packing instruction - Cargo Aircraft only : 200

Special precautions for user

- : 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.

SECTION 15. Regulatory information

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

EU legislation


Seveso directive 96/82/EC : Covered

National legislation

: Ensure all national/local regulations are observed.

15.2. Chemical Safety Assessment

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

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SECTION 16. Other information

- Indication of changes** : Revised safety data sheet in accordance with commission regulation (EU) No 453/2010
- Training advice** : Receptacle under pressure.
- List of full text of R-phrases in section 3.** : R8 : Contact with combustible material may cause fire.
- List of full text of H-statements in section 3.** : H270 - May cause or intensify fire; oxidizer.
H280 - Contains gas under pressure; may explode if heated.
- Further information** : ~~Classification in accordance with calculation methods of regulation (EC) 1272/2008 CLP / (EC) 1999/45 DPD.~~
This Safety Data Sheet has been established in accordance with the applicable European Union legislation.
- 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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