OXYGEN (18O2, 97%) CHEMICAL PURITY >99.8%

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830 and according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Date of issue: 14/12/2010 Revision date: 20/07/2022 Supersedes: 10/12/2018 Version: 5.2

OLM-212

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

1.1. Product identifier

Product form	:	Substance
Substance name	:	OXYGEN (18O2, 97%) CHEMICAL PURITY >99.8%
EC Index-No.	:	008-001-00-8 (Unlabeled)
EC-No.	:	231-956-9 (Unlabeled)
CAS-No.	:	32767-18-3
Product code	:	OLM-212
Formula	:	*O2

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

1.2.1. Relevant identified uses

Main use category	:	Professional use
Industrial/Professional use spec	:	For professional use only

1.2.2. Uses advised against

No additional information available

1.3. Details of the supplier of the safety data sheet

Cambridge Isotope Laboratories, Inc.
50 Frontage Road
Andover, MA 01810
USA

USA: 1-800-322-1174 Int: 1-978-749-8000
cilsales@isotope.com www.isotope.com

Emergency telephone number

Emergency numbers:

Chemtrec: 1-800-424-9300 (24 hours)
International: 1-703-741-5970 (24 hours)

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

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

Ox. Gas 1 H270

Press. Gas (Comp.) H280

Full text of hazard classes and H-statements : see section 16

Classification according to Directive 67/548/EEC [DSD] or 1999/45/EC [DPD]

O; R8
R5

Full text of R-phrases: see section 16

GHS-US classification

Ox. Gas 1 H270
Press. Gas (Comp.) H280

Full text of H statements : see section 16

Adverse physicochemical, human health and environmental effects

No additional information available

2.2. Label elements

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

Hazard pictograms (CLP) :

GHS04 GHS03

Signal word (CLP) : Danger

Hazard statements (CLP) : H270 - May cause or intensify fire; oxidizer
H280 - Contains gas under pressure; may explode if heated

Precautionary statements (CLP) : P220 - Keep/Store away from clothing, combustible materials, combustibles
P244 - Keep valves and fittings free from oil and grease.
P370+P376 - In case of fire: Stop leak if safe to do so.
P403 - Store in a well-ventilated place.
P410+P403 - Protect from sunlight. Store in a well-ventilated place.

GHS-US labeling

Hazard pictograms (GHS-US) :

GHS04 GHS03

Signal word (GHS-US) : Danger

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P370+P376 - In case of fire: Stop leak if safe to do so
P403 - Store in a well-ventilated place.
P410+P403 - Protect from sunlight. Store in a well-ventilated place.

2.3. Other hazards

No additional information available

SECTION 3: Composition/Information on ingredients

3.1. Substances

Name	Product identifier	%	Classification according to Directive 67/548/EEC
OXYGEN (18O2, 97%) CHEMICAL PURITY >99.8%	(CAS-No.) 32767-18-3 (EC-No.) 231-956-9 (Unlabeled) (EC Index-No.) 008-001-00-8 (Unlabeled)	100	O; R8 R5

Name	Product identifier	%	Classification according to Regulation (EC) No. 1272/2008 [CLP]
OXYGEN (18O2, 97%) CHEMICAL PURITY >99.8%	(CAS-No.) 32767-18-3 (EC-No.) 231-956-9 (Unlabeled) (EC Index-No.) 008-001-00-8 (Unlabeled)	100	Ox. Gas 1, H270 Press. Gas (Comp.), H280

Full text of R- and H- phrases: see section 16

Name	Product identifier	%	GHS-US classification
OXYGEN (18O2, 97%) CHEMICAL PURITY >99.8% (Main constituent)	(CAS-No.) 32767-18-3	100	Ox. Gas 1, H270 Press. Gas (Comp.), H280

Full text of H-phrases: see section 16

3.2. Mixtures

Not applicable

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures general : Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.

First-aid measures after inhalation : If breathed in, move person to fresh air. If not breathing, give artificial respiration. Consult a physician.

First-aid measures after skin contact : Wash off with soap and plenty of water. Consult a physician.

First-aid measures after eye contact : Flush eyes with water as a precaution.

First-aid measures after ingestion : Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

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

Symptoms/effects after inhalation : May be harmful if inhaled. May cause respiratory tract irritation.

Symptoms/effects after skin contact : May be harmful if absorbed through skin. May cause skin irritation.

Symptoms/effects after eye contact : Contact may cause eye irritation.

Symptoms/effects after ingestion : May be harmful if swallowed.

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

No additional information available

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media : Use water spray, alcohol-resistant foam, dry chemical, or carbon dioxide.

5.2. Special hazards arising from the substance or mixture

Explosion hazard : Heat may build pressure, rupturing closed containers, spreading fire and increasing risk of burns and injuries. Heating may cause an explosion.

Reactivity : Heating may cause an explosion. Extreme risk of explosion by shock, friction, fire or other sources of ignition.

5.3. Advice for firefighters

Firefighting instructions : Wear self contained breathing apparatus for fire fighting if necessary. DO NOT fight fire when fire reaches explosives. Evacuate area.

Protection during firefighting : 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

General measures : Remove ignition sources. No open flames. No smoking. Use special care to avoid static electric charges.

6.1.1. For non-emergency personnel

Emergency procedures : Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas.

6.1.2. For emergency responders

Emergency procedures : Stop leak if safe to do so.

6.2. Environmental precautions

Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

6.3. Methods and material for containment and cleaning up

For containment : Contain spillage, then collect with non-combustible absorbent material. Disposal should be in accordance with applicable Federal, State and local regulations.

6.4. Reference to other sections

No additional information available

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Additional hazards when processed : Keep away from sources of ignition - No smoking. Hazardous waste due to potential risk of explosion.

Precautions for safe handling : Keep reduction valves free from grease and oil. Keep away from sources of ignition - No smoking. No open flames. No smoking.

Hygiene measures : Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

7.2. Conditions for safe storage, including any incompatibilities

Technical measures : Keep container tightly closed in a dry and well-ventilated space. Proper grounding procedures to avoid static electricity should be followed.

Storage conditions : Store at room temperature away from light and moisture. Keep in fireproof place.

Incompatible materials : Combustible materials. Direct sunlight. Heat sources.

Storage area : Store in a well-ventilated place.

7.3. Specific end use(s)

No additional information available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

No additional information available

8.2. Exposure controls

Personal protective equipment : Safety glasses. Gloves. Protective clothing. Self-contained breathing apparatus.

Hand protection : Wear suitable protective clothing and gloves.

Eye protection : Chemical goggles or safety glasses.

Skin and body protection : Wear suitable protective clothing.

Respiratory protection : When appropriate, use NIOSH/CEN approved respirator.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	: Gas
Appearance	: Compressed Gas.
Molecular mass	: 36 g/mol (Labeled)
Color	: Colorless.
Odor	: Odourless.
Odor threshold	: No data available
pH	: No data available
Relative evaporation rate (butyl acetate=1)	: No data available
Melting point	: -218 °C (-360 °F) - lit.
Freezing point	: No data available
Boiling point	: -183 °C (-297 °F) - lit.
Flash point	: No data available
Auto-ignition temperature	: No data available
Decomposition temperature	: No data available
Flammability (solid, gas)	: No data available
Vapor pressure	: No data available
Relative vapor density at 20 °C	: No data available
Relative density	: 1.1 - (Air = 1.0)
Solubility	: No data available
Log Pow	: No data available
Log Kow	: No data available
Viscosity, kinematic	: No data available
Viscosity, dynamic	: No data available
Explosive properties	: Heating may cause an explosion.
Oxidizing properties	: May intensify fire; oxidizer.
Explosion limits	: No data available

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

Heating may cause an explosion. Extreme risk of explosion by shock, friction, fire or other sources of ignition.

10.2. Chemical stability

Stable if stored under recommended conditions.

10.3. Possibility of hazardous reactions

No additional information available

10.4. Conditions to avoid

Not available. Heat. Sparks. Open flame. Direct sunlight. Overheating.

10.5. Incompatible materials

Phosphorus, Organic materials, Powdered metals.

10.6. Hazardous decomposition products

No additional information available

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity	:	Not classified
Skin corrosion/irritation	:	Not classified
Serious eye damage/irritation	:	Not classified
Respiratory or skin sensitization	:	Not classified
Germ cell mutagenicity	:	Not classified
Carcinogenicity	:	Not classified
Reproductive toxicity	:	Not classified
Specific target organ toxicity – single exposure	:	Not classified
Specific target organ toxicity – repeated exposure	:	Not classified
Aspiration hazard	:	Not classified
Potential Adverse human health effects and symptoms	:	Nausea. Dizziness. Unconsciousness. May be harmful. To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated, May cause cyanosis, Shortness of breath, Tremore, Diarrhea, flushing, shivering, dizziness, My cause headache and dizziness, Skin disorders, muscle cramps, tinnitus, Gastrointestinal discomfort.
Symptoms/effects after inhalation	:	May be harmful if inhaled. May cause respiratory tract irritation.
Symptoms/effects after skin contact	:	May be harmful if absorbed through skin. May cause skin irritation.
Symptoms/effects after eye contact	:	Contact may cause eye irritation.
Symptoms/effects after ingestion	:	May be harmful if swallowed.

SECTION 12: Ecological information

12.1. Toxicity

No additional information available

12.2. Persistence and degradability

No additional information available

12.3. Bioaccumulative potential

No additional information available

12.4. Mobility in soil

No additional information available

12.5. Results of PBT and vPvB assessment

No additional information available

12.6. Other adverse effects

No additional information available

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Regional legislation (waste)	:	Waste materials should be disposed of under conditions which meet Federal, State, and local environmental control regulations.
Product/Packaging disposal recommendations	:	Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material.
Additional information	:	Hazardous waste due to potential risk of explosion.
Ecology - waste materials	:	Dispose of as unused product.

SECTION 14: Transport information

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

14.1. UN number

UN-No.(DOT) : 1072

DOT NA no. UN1072

14.2. UN proper shipping name

Proper Shipping Name (DOT) : Oxygen, compressed

Class (DOT) : 2.2 - Class 2.2 - Non-flammable compressed gas 49 CFR 173.115

Hazard labels (DOT) : 2.2 - Non-flammable gas
5.1 - Oxidizer

DOT Special Provisions (49 CFR 172.102) : 110 - Fire extinguishers transported under UN1044 may include installed actuating cartridges (cartridges, power device of Division 1.4C or 1.4S), without changing the classification of Division 2.2, provided the aggregate quantity of deflagrating (propellant) explosives does not exceed 3.2 grams per extinguishing unit.
A14 - This material is not authorized to be transported as a limited quantity or consumer commodity in accordance with 173.306 of this subchapter when transported aboard an aircraft.

DOT Packaging Exceptions (49 CFR 173.xxx) : 306

DOT Packaging Non Bulk (49 CFR 173.xxx) : 302

DOT Packaging Bulk (49 CFR 173.xxx) : 314;315

14.3. Additional information

Other information : No supplementary information available.

Overland transport

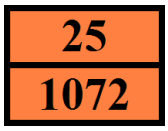
Class (ADR) : 2 - Gases

Hazard identification number (Kemler No.) : 25

Classification code (ADR) : 1O

Hazard labels (ADR) : 2.2 - Non-flammable, non-toxic gases
5.1 - Oxidizing substances

Orange plates :



Tunnel restriction code (ADR) : E

Limited quantities (ADR) 0

EAC : 2S

Excepted quantities (ADR) : E0

Transport by sea

DOT Vessel Stowage Location : A - The material may be stowed ‘‘on deck’’ or ‘‘under deck’’ on a cargo vessel and on a passenger vessel.

MFAG-No : 122

Air transport

DOT Quantity Limitations Passenger aircraft/rail (49 CFR 173.27) : 75 kg

DOT Quantity Limitations Cargo aircraft only (49 CFR 175.75) : 150 kg

Civil Aeronautics Law : Gases under pressure/Gases nonflammable nontoxic under pressure

14.4. Environmental hazards

Other information : No supplementary information available.

14.5. Special precautions for user

14.6. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable

SECTION 15: Regulatory information

15.1. US Federal regulations

OXYGEN (18O2, 97%) CHEMICAL PURITY >99.8% **(32767-18-3)**	
SARA Section 302 Threshold Planning Quantity (TPQ)	Not subject to reporting requirements of the United States SARA Section 302
SARA Section 311/312 Hazard Classes	Sudden release of pressure hazard
SARA Section 313 - Emission Reporting	Not subject to reporting requirements of the United States SARA Section 313

15.2. International regulations

CANADA

No additional information available

15.2.1. National regulations

No additional information available

15.3. US State regulations

OXYGEN (18O2, 97%) CHEMICAL PURITY >99.8%**(32767-18-3)**	
U.S. - California - Proposition 65 - Carcinogens List	No
U.S. - California - Proposition 65 - Developmental Toxicity	No
U.S. - California - Proposition 65 - Reproductive Toxicity - Female	No
U.S. - California - Proposition 65 - Reproductive Toxicity - Male	No
State or local regulations	RTK - U.S. - Massachusetts - Right To Know List RTK - U.S. - New Jersey - Right to Know Hazardous Substance List RTK - U.S. - Pennsylvania - RTK (Right to Know) List

SECTION 16: Other information

Other information : This product is not radioactive. The data given for this product are those of the corresponding unlabeled compound, unless specifically indicated otherwise. Health and safety data for labeled compounds are generally not available, but are assumed to be similar or identical to the corresponding unlabeled compound.

Full text of R-, H- and EUH-phrases:

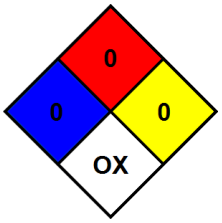
Ox. Gas 1	Oxidizing gases Category 1
Press. Gas (Comp.)	Gases under pressure Compressed gas
H270	May cause or intensify fire; oxidizer
H280	Contains gas under pressure; may explode if heated
R5	Heating may cause an explosion
R8	Contact with combustible material may cause fire
O	Oxidizing

NFPA health hazard : 0 - Materials that, under emergency conditions, would offer no hazard beyond that of ordinary combustible materials.

NFPA fire hazard : 0 - Materials that will not burn under typical fire conditions, including intrinsically noncombustible materials such as concrete, stone, and sand.

NFPA reactivity : 0 - Material that in themselves are normally stable, even under fire conditions.

NFPA specific hazard : OX - Materials that posses oxidizing properties.



Hazard Rating

Health	: 0 Minimal Hazard - No significant risk to health
Flammability	: 1 Slight Hazard
Physical	: 3 Serious Hazard

CIL Substance SDS

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product