

ACCORDING TO US CFR 1910.1200

1. SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1 Product identifier

Product Name	OXYGEN, COMPRESSED.
Synonym(s)	CALIBRATING GAS MIX, OXYGEN, AVIATOR'S BR, OXYGEN, TECHNICAL.
CAS No.	7782-44-7
EC No.	231-956-9

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

Identified Use(s)	Industrial gas.
Uses Advised Against	Not known.

1.3 Details of the supplier of the safety data sheet

Company Identification	Hudson Technologies Company
Address	PO Box 1541 One Blue Hill Plaza Pearl River, New York USA
Postal code	10965
Telephone	+1 (800) 953 2244
Fax	+1 (845) 512 6070
E-mail	information@hudsontech.com

1.4 Emergency telephone number

Company	+1 (800) 501 4376
CHEMTREC (U.S.)	+1 (800) 424 9300
INTERNATIONAL	+1 (703) 527 3887

2. SECTION 2: HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

US CFR 1910.1200 Ox. Gas 1; May cause or intensify fire; oxidizer.
Gases under pressure; Press. Gas; Compressed gas.

2.2 Label elements

Product Name OXYGEN, COMPRESSED.

Hazard Pictogram(s)



GHS03



GHS04

Signal Word(s) Danger.

Hazard Statement(s) H270: May cause or intensify fire; oxidizer.
H280: Contains gas under pressure; may explode if heated.

Precautionary Statement(s) P202: Do not handle until all safety precautions have been read and understood.
P220: Keep/Store away from clothing/combustible materials.
P244: Keep valves and fittings free from oil and grease.
P271+P403: Use and store only outdoors or in a well-ventilated place.
P370+P376: In case of fire, use: Water, Dry powder.
P410+P403: Protect from sunlight. Store in a well-ventilated place.

2.3 Other hazards

Breathing 80% or more oxygen at atmospheric pressure for more than a few hours may cause nasal stuffiness, cough, sore throat, chest pain and breathing difficulty. Breathing oxygen at higher pressure increases the likelihood of adverse effects within a shorter time period. Breathing pure oxygen under pressure may cause lung damage and also central nervous system effects resulting in dizziness, poor coordination, tingling sensation, visual and hearing disturbances, muscular twitching, unconsciousness and convulsions. Breathing oxygen under pressure may cause

prolongation of adaptation to darkness and reduced peripheral vision.

2.4 Additional Information

- CGA-PG05: Use a back flow preventive device in the piping.
- CGA-PG20 + CGA-PG10: Use only with equipment of compatible materials of construction and rated for cylinder pressure.
- CGA-PG22: Use only with equipment cleaned for oxygen service.
- CGA-PG21: Open valve slowly.
- CGA-PG06: Close valve after each use and when empty.
- CGA-PG02: Protect from sunlight when ambient temperature exceeds 52 °C (125 °F).
- CGA-PG27: Read and follow the Safety Data Sheet (SDS) before use.

This SDS is available in languages other than English.

3. SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

HAZARDOUS INGREDIENT(S)	Common Names	CAS No.	%W/W	Hazard Statement(s)	Hazard Pictogram(s)
Oxygen	CALIBRATING GAS MIX, OXYGEN, AVIATOR'S BR, OXYGEN, TECHNICAL.	7782-44-7	100	Press. Gas, Compressed gas; H280, Ox. Gas 1; H270	GHS04 GHS03

4. SECTION 4: FIRST AID MEASURES

4.1 Description of first aid measures

- Inhalation: If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing. If breathing has stopped, apply artificial respiration. Get medical attention.
- Skin Contact: Contact with rapidly expanding gas may cause burns or frostbite.
- Eye Contact: Contact with rapidly expanding gas may cause burns or frostbite.
- Ingestion: Unlikely route of exposure.

4.2 Most important symptoms and effects, both acute and delayed

Inhalation: High concentrations: Nausea, Dizziness, Convulsion.

4.3 Indication of any immediate medical attention and special treatment needed

Notes to a physician: All individuals exposed for long periods to

oxygen at high pressure and who exhibit overt oxygen toxicity should have ophthalmologic examinations.

5. SECTION 5: FIREFIGHTING MEASURES

5.1 Extinguishing media

Suitable Extinguishing media In case of fire, use: Water, Dry powder.

Unsuitable extinguishing media None known.

5.2 Special hazards arising from the substance or mixture

Contains gas under pressure; may explode if heated. May accelerate combustion. May react with combustible substances creating fire or explosion hazard.

5.3 Advice for fire-fighters

Fire fighters should wear complete protective clothing including self-contained breathing apparatus. Keep containers cool by spraying with water if exposed to fire. If it is safe to do so, containers should be removed from fire area because they are likely to rupture under fire conditions.

6. SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Evacuate area. Shut off leaks if without risk. Remove all combustible materials from affected area. Avoid breathing gas. Wear suitable respiratory protection.

6.2 Environmental precautions

No measures required.

6.3 Methods and material for containment and cleaning up

Allow small spillages to evaporate provided there is adequate ventilation.

6.4 Reference to other sections

See Also Section 8, 13.

7. SECTION 7: HANDLING AND STORAGE

7.1 Precautions for safe handling

Provide sufficient ventilation. Keep/Store away from clothing/combustible materials. Keep valves and fittings free from oil and grease. Do not drag, roll, slide or drop cylinders. Secure cylinders in an upright position at all times, close all valves when not in use. Keep closed even when empty. Do not eat, drink or smoke when using this product. Wash hands thoroughly after handling.

7.2 Conditions for safe storage, including any incompatibilities

Store in a well-ventilated place. Protect from sunlight.

Storage temperature

<125°F (52°C)

Storage life

Stable under normal conditions.

Incompatible materials

Combustible materials, Reducing agent, Oil, grease.

8. SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Occupational Exposure Limits None assigned.

8.2 Exposure controls

Appropriate engineering controls Provide adequate ventilation, including appropriate local extraction.

Personal protection equipment



Eye Protection

Wear eye/face protection.



Skin protection

Wear suitable gloves.



Respiratory protection

No personal respiratory protective equipment normally required. In poorly ventilated areas or confined spaces, use an airline respirator or self-contained breathing apparatus.

Thermal hazards

Not applicable.

9. SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Appearance

Gas.

Color: Colorless.

Odor	Odorless.
Odour threshold	Not established.
pH	Not applicable.
Melting point/freezing point	-361.1°F (-218.4°C)
Initial boiling point and boiling range	-297.4°F (-183°C)
Flash Point	Not applicable.
Evaporation rate	Not applicable.
Flammability (solid, gas)	Non-flammable. May accelerate combustion.
Upper/lower flammability or explosive limits	Not applicable.
Vapor pressure	Not available.
Vapor density	1.1 (Air = 1)
Density	0.083 lb/ft ³ (1.326 kg/m ³)
Relative density	1.1
Solubility(ies)	Solubility (Water): Negligible. Solubility (Other): Not available.
Partition coefficient: n-octanol/water	0.65
Auto-ignition temperature	Not applicable.
Decomposition Temperature (°C)	Not applicable.
Viscosity	Not applicable.
Explosive properties	Not explosive.
Oxidizing properties	May cause or intensify fire; oxidizer.
9.2 Other information	
Percent Volatile (%)	100%

10. SECTION 10: STABILITY AND REACTIVITY

10.1 Reactivity	Stable under normal conditions.
10.2 Chemical Stability	Stable under normal conditions.
10.3 Possibility of hazardous reactions	May react with combustible substances creating fire or explosion hazard.
10.4 Conditions to avoid	None anticipated.

10.5 Incompatible materials

Combustible materials, Reducing agent, Oil, grease.

10.6 Hazardous decomposition product(s)

No hazardous decomposition products known.

11. SECTION 11: TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity - Ingestion	Low acute toxicity.
Acute toxicity - Skin Contact	Low acute toxicity.
Acute toxicity - Inhalation	Breathing 80% or more oxygen at atmospheric pressure for more than a few hours may cause nasal stuffiness, cough, sore throat, chest pain and breathing difficulty. Breathing oxygen at higher pressure increases the likelihood of adverse effects within a shorter time period. Breathing pure oxygen under pressure may cause lung damage and also central nervous system effects resulting in dizziness, poor coordination, tingling sensation, visual and hearing disturbances, muscular twitching, unconsciousness and convulsions. Breathing oxygen under pressure may cause prolongation of adaptation to darkness and reduced peripheral vision.
Skin corrosion/irritation	Non-irritant.
Serious eye damage/irritation	Non-irritant.
Skin sensitization data	Not classified.
Respiratory sensitization data	Not classified.
Germ cell mutagenicity	There is no evidence of mutagenic potential.
Carcinogenicity	No evidence of carcinogenicity.

Reproductive toxicity	Not classified.
Lactation	Not classified.
STOT - single exposure	None anticipated.
STOT - repeated exposure	None anticipated.
Aspiration hazard	Not classified.
11.2 Other information	
	Not known.

12. SECTION 12: ECOLOGICAL INFORMATION

12.1 Toxicity

Toxicity - Aquatic invertebrates	Low toxicity to invertebrates.
Toxicity - Fish	Low toxicity to fish.
Toxicity - Algae	Low toxicity to algae.
Toxicity - Sediment	Not classified.

Compartment

Toxicity - Terrestrial	Not classified.
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Compartment

12.2. Persistence and Degradation

No adverse ecological effects are expected.

12.3. Bioaccumulative potential

No adverse ecological effects are expected.

12.4. Mobility in soil

Not applicable.

12.5 Other adverse effects

None anticipated.

13. SECTION 13: DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Containers must not be punctured or destroyed by burning, even

when empty. Refer to manufacturer/supplier for information on recovery/recycling.

13.2 Additional Information

Disposal should be in accordance with local, state or national legislation.

14. SECTION 14: TRANSPORT INFORMATION

14.1 UN number

UN No. 1072

14.2 UN proper shipping name

UN proper shipping name OXYGEN, COMPRESSED.

14.3 Transport hazard class(es)

ADR/RID Class 2.2 (5.1)

IMDG Class 2.2 (5.1)

IMDG EMS Not available.

ICAO/IATA

Excepted Quantities E0

Passenger and Cargo Aircraft 75KG

Limited Quantities

Cargo Aircraft Limited Quantities 150KG

Max net Qty

Special Provisions A175, A302

Emergency Response 2X

Guidebook (ERG) Code

ADR Classification Code 10

ADR HIN 25

ADR Transport Category 3

Tunnel Restriction Code E

Emergency Action Code 25

Advice on Additional Personal Not applicable.

Protection (APP)

14.4 Packing group

Packing group Not applicable.

Labels 2.2 +5.1





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Special Provisions 355 655
Limited Quantities 0
Excepted Quantities E0

Mixed Packing Instructions for Packages P200

Special Packing Provisions for Packages Not applicable.

Mixed Packing Instructions for Packages MP9

14.5 Environmental hazards

Environmental hazards Not classified as a Marine Pollutant.

14.6 Special precautions for user

Special precautions for user Not known.

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

Packing Instructions for Portable (M)

Tanks

Special Provisions for Portable Tanks Not applicable.

Tanks

Tank Code for Tanks CxBN(M)

Special Provisions for Tanks TA4 TT9

Vehicle for Tank Carriage AT

Special Provisions for Carriage - Packages Not applicable.

Packages

Special Provisions for Carriage - Bulk Not applicable.

Bulk

Special Provisions for Carriage - Loading, Unloading and Handling CV9 CV10 CV36

Special Provisions for Carriage - Operation Not applicable.

Operation

15. SECTION 15: REGULATORY INFORMATION

15.1 Federal

Toxic and hazardous substances Not listed.

(29 CFR 1910; Subpart Z)



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National emission standards for Not listed.

hazardous air pollutants (40 CFR

61.01)

Title III Consolidated List of Lists Not listed.

TSCA (Toxic Substance Control Oxygen (CAS No. 7782-44-7).

Act)

CAA 602 - Ozone Depleting Not listed.

Substances (ODS)

15.2 State

State Right to Know Lists Listed in: New Jersey, Pennsylvania, Rhode Island.

Proposition 65 (California) Not listed.

15.3 Other

OSPAR List of Chemicals for Not listed.

Priority Action

NTP (National Toxicology Not listed.

Program)

OSHA Not listed.

(List of Highly Hazardous

Chemicals, Toxics and

Reactives)

IARC (International Agency for Not listed.

Research on Cancer)

16. SECTION 16: OTHER INFORMATION

The following sections contain 1 -16

revisions or new statements:

NFPA		HMIS	
Health	0	Health	0
Fire	0	Flammability	0
Instability	0	Physical hazards	3

LEGEND:

Hazard Pictogram(s)



GHS03



GHS04

Hazard Statement(s)

H270: May cause or intensify fire; oxidizer.

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

Precautionary Statement(s)

P220: Keep/Store away from clothing/combustible materials.

P244: Keep valves and fittings free from oil and grease.

P370+P376: In case of fire, use: Water, Dry powder.

P403: Store in a well-ventilated place.

P410+P403: Protect from sunlight. Store in a well-ventilated place.

Additional Information required by Federal Standard 313 Rev. E:

Contract or Solicitation SPE4A6-16-D-0226

Number:

Prime Contractor: Hudson Technologies, Inc.

Prime Contractor CAGE: 7DSQ0

National Stock Number (NSN): 6830009453961

Specification Reference:

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