



SAFETY DATA SHEET

This safety data sheet was created pursuant to the requirements of:
US OSHA HCS 2024

Issuing Date 04-Apr-2000

Revision date 20-Apr-2026

Revision Number 10

1. Identification

Product identifier

Product Name OXYGEN, LIQUID

Other means of identification

UN number or ID number UN1073

Synonyms MTG MSDS 242; LIQUID OXYGEN; LOX; OXYGEN; OXYGEN, PRESSURIZED LIQUID; UN 1073; O₂; OXYGEN (CRYOGENIC LIQUID)

Other information Classification determined in accordance with Compressed Gas Association standards.

Recommended use of the chemical and restrictions on use

Recommended use Industrial and Specialty Gas Applications

Restrictions on use None known

Details of the supplier of the safety data sheet

Manufacturer Address

Nippon Sanso Matheson, Inc.
909 Lake Carolyn Parkway
Suite 1100
Irving, TX 75039
General Information: 1-800-416-2505

Emergency telephone number

Emergency telephone CHEMTREC: +1-703-527-3887 (INTERNATIONAL)
1-800-424-9300 (NORTH AMERICA)

2. Hazard(s) identification

Classification of the substance or mixture

Oxidizing gases	Category 1
Gases under pressure	Refrigerated liquefied gas

Hazards not otherwise classified (HNOC)

Not applicable.

Label elements

Danger

**Hazard statements**

May cause or intensify fire; oxidizer.

Contains refrigerated gas; may cause cryogenic burns or injury.

Precautionary Statements - Prevention

Keep reduction valves/valves and fittings free from oil and grease.

Keep/Store away from clothing and other combustible materials.

Wear cold insulating gloves and either face shield or eye protection.

Precautionary Statements - Response

Thaw frosted parts with lukewarm water. Do not rub affected area. Get immediate medical advice/attention.

In case of fire: Stop leak if safe to do so.

Precautionary Statements - Storage

Store in a well-ventilated place.

Hazards classified under paragraph (d)(1)(ii) of 1910.1200

No information available.

Other information

May cause frostbite upon sudden release of liquefied gas.

3. Composition/information on ingredients**Substance**

Chemical name	CAS No.	Weight-%	Trade secret
Oxygen	7782-44-7	100	-

4. First-aid measures**Description of first aid measures****Inhalation**

Remove to fresh air. If breathing has stopped, give artificial respiration. Get medical attention immediately.

Eye contact

Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get immediate medical attention.

Skin contact

Get immediate medical attention. If frostbite or freezing occur, immediately flush with plenty of lukewarm water (105-115°F; 41-46°C). If warm water is not available, gently wrap affected parts in blankets.

Ingestion

If swallowed, get medical attention.

Most important symptoms and effects, both acute and delayed

Symptoms Frostbite. Suffocation.

Effects of Exposure None known.

Indication of any immediate medical attention and special treatment needed

Note to physicians For inhalation, consider oxygen.

5. Fire-fighting measures

Suitable Extinguishing Media Carbon dioxide (CO₂), Dry chemical.
Large Fire Water spray, fog or regular foam.

Unsuitable extinguishing media Do not direct water at source of leak or safety devices; icing may occur.

Specific hazards arising from the chemical Negligible fire hazard. Oxidizer. May ignite or explode on contact with combustible material. Cylinders may rupture under extreme heat.

Explosion data

Sensitivity to mechanical impact Yes.

Sensitivity to static discharge None.

Special protective equipment and precautions for fire-fighters Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear. Damaged cylinders should be handled only by specialists. Evacuate area and fight fire from a safe distance. Do not attempt to extinguish fire unless flow of material can be stopped first. Cool containers / tanks with water spray. Stay upwind and keep out of low areas. Avoid inhalation of material or combustion by-products. Move containers from fire area if you can do it without risk. Do not direct water at source of leak or safety devices; icing may occur. Withdraw immediately in case of rising sound from venting safety devices or discoloration of tank. For tank, rail car or tank truck, evacuation radius: 800 meters (1/2 mile). Stay away from the ends of tanks.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

Personal precautions Contents under pressure. Ensure adequate ventilation. Keep people away from and upwind of spill/leak. Wear personal protective clothing and equipment, see Section 8.

Methods and material for containment and cleaning up

Methods for containment Use water spray to reduce vapors or divert vapor cloud drift. Keep unnecessary and unprotected personnel away from spillage. Ventilate the area. Leaking gas fire: Do not extinguish, unless leak can be stopped safely. Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Stay upwind and keep out of low areas.

Methods for cleaning up Do not direct water at spill or source of leak. Use non-sparking tools. Stay upwind. Ventilate closed spaces before entering. Damaged cylinders should be handled only by specialists.

Prevention of secondary hazards Clean contaminated objects and areas thoroughly observing environmental regulations.

7. Handling and storage

Precautions for safe handling

Advice on safe handling Obtain special instructions before use. Do not handle until all safety precautions have been

read and understood. Keep away from contact with clothing and other combustible materials to avoid fire. Contents under pressure. Empty containers pose a potential fire and explosion hazard. Do not cut, puncture or weld containers. Avoid breathing gas. Wear personal protective equipment. Close valve after each use and when empty. Keep reduction valves/valves and fittings free from oil and grease. Keep container in a well-ventilated place. Wash thoroughly after handling. Do not eat, drink or smoke when using this product. Close valve after each use and when empty.

General hygiene considerations

Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes or clothing. Do not eat, drink or smoke when using this product. Regular cleaning of equipment, work area and clothing is recommended. Wash hands before breaks and immediately after handling the product.

Conditions for safe storage, including any incompatibilities**Storage Conditions**

Keep containers tightly closed in a dry, cool and well-ventilated place. Protect from sunlight. Subject to storage regulations: U.S. OSHA 29 CFR 1910.101. For additional and specific safe practices consult the following Compressed Gas Association (CGA) publications: P-1 "Safe Handling of Compressed Gases in Cylinders", AV-1 "Safe Handling and Storage of Compressed Gases", and "Compressed Gas Handbook". Keep at temperatures below 52°C / 125.6°F. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Keep away from Incompatible materials.

8. Exposure controls/personal protection**Control Parameters****Exposure Limits**

This product, as supplied, does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies.

Biological occupational exposure limits

This product, as supplied, does not contain any hazardous materials with biological limits established by the region specific regulatory bodies.

Appropriate engineering controls**Engineering controls**

Provide local exhaust ventilation. Use a back flow preventive device in the piping. Use only equipment of compatible materials on construction. Use only with equipment rated for cylinder pressure. Ensure that eyewash stations and safety showers are close to the workstation location.

Individual protection measures, such as personal protective equipment**Eye/face protection**

For the gas: Eye protection not required, but recommended. For the liquid: Chemical safety goggles. Contact lenses should not be worn.

Hand protection

For the gas: Protective gloves are not required, but recommended. For the liquid: Wear insulated gloves.

Skin and body protection

For the gas: Protective clothing is not required, but recommended. For the liquid: Wear appropriate protective, cold insulating clothing.

Respiratory protection

Under conditions of frequent use or heavy exposure, respiratory protection may be needed. Respiratory protection is ranked in order from minimum to maximum. Consider warning properties before use.
Any air-purifying respirator with a full facepiece and a dust or mist filter.

Any powered, air-purifying respirator with a dust and mist filter.
Any supplied-air respirator with a full facepiece that is operated in a pressure-demand or other positive-pressure mode.

9. Physical and chemical properties

Information on basic physical and chemical properties

Appearance	Refrigerated liquefied gas
Physical state	Gas
Color	Colorless
Odor (includes odor threshold)	Odorless

Property	Values	Remarks • Method
Melting point / freezing point	-218.4 °C / -361 °F	
Boiling point (or initial boiling point or boiling range)	-182.96 °C / -297 °F	
Flammability		Non-flammable gas
Flammability Limit in Air		
Upper flammability or explosive limits		No data available
Lower flammability or explosive limits		No data available
Flash point		No data available
Autoignition temperature		No data available
Decomposition temperature		No data available
SADT (°C)		No data available
pH		No data available
pH (as aqueous solution)		No data available
Kinematic viscosity		No data available
Dynamic viscosity	0.02075 cP	
Solubility	Soluble in Alcohol	
Water solubility	3.2%	@ 25 °C
Partition coefficient n-octanol/water (log value)		No data available
Vapor pressure (includes evaporation rate)	760 mmHg	@ -183 °C
Evaporation rate		No data available
Density and/or relative density	1.14	@ -183 °C
Bulk density		No data available
Liquid Density		No data available
Relative vapor density	1.43	
Particle characteristics		
Particle Size		No data available
Particle Size Distribution		No data available
Other information		
Molecular formula	O ₂	
Molecular weight	31.9988	
VOC content	No information available	
Softening point	No information available	

Information with regard to physical hazard classes

Explosives	
Explosive properties	No information available
Oxidizing properties	May intensify fire; oxidizer
Sensitivity to mechanical impact	Yes

10. Stability and reactivity

Reactivity	Oxidizer.
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Chemical stability	Stable under normal conditions.
Possibility of hazardous reactions	None under normal processing.
Conditions to avoid	Excessive heat. Protect from physical damage. Containers may rupture or explode if exposed to heat. Incompatible materials.
Incompatible materials	Combustible material, Halocarbons, Metals, Bases, Reducing agent, Amines, Metal salts, Oxidizing materials.
Hazardous decomposition products	Miscellaneous decomposition products.

11. Toxicological information

Information on likely routes of exposure

Product Information	.
Inhalation	Irritation. Changes in body temperature. Nausea. Difficulty in breathing. Irregular heartbeat. Chest pain. Lung damage. Dizziness. Disorientation. Hallucinations. Mood swings. Pain in extremities. Tremors. Lung congestion. Convulsions. Cough.
Eye contact	Contact with product may cause frostbite.
Skin contact	Contact with product may cause frostbite.
Ingestion	Ingestion of gas unlikely.

Symptoms related to the physical, chemical and toxicological characteristics

Symptoms	Frostbite. Suffocation.
Acute toxicity	Based on available data, the classification criteria are not met.
Numerical measures of toxicity	Based on available data, the classification criteria are not met.

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Skin corrosion/irritation	No information available.
Serious eye damage/eye irritation	No information available.
Respiratory or skin sensitization	No information available.
Germ cell mutagenicity	No information available.
Carcinogenicity	No information available.
Reproductive toxicity	No information available.
STOT - single exposure	No information available.
STOT - repeated exposure	No information available.
Aspiration hazard	Not applicable.

Other adverse effects No information available.

Interactive effects No information available.

12. Ecological information

Ecotoxicity The environmental impact of this product has not been fully investigated.

Persistence and degradability No information available.

Bioaccumulative potential

Mobility in soil No information available.

Other adverse effects No information available.

13. Disposal considerations

Disposal methods

Waste from residues/unused products Dispose of contents/container in accordance with local, regional, national, and international regulations as applicable.

Contaminated packaging Do not reuse empty containers.

14. Transport information

DOT

UN number or ID number	UN1073
Proper shipping name	Oxygen, refrigerated liquid
Transport hazard class(es)	2.2
Subsidiary hazard class	5.1
Special Provisions	T75, TP5, TP22
DOT Marine Pollutant	NP
Description	UN1073, Oxygen, refrigerated liquid, 2.2 (5.1)
Emergency Response Guide Number	122

IATA

	Forbidden for transport.
UN number or ID number	UN1073
UN proper shipping name	Oxygen, refrigerated liquid
Transport hazard class(es)	2.2
Subsidiary hazard class	5.1
Environmental hazards	No
Special Provisions	A2
ERG Code	2X

Description Forbidden**IMDG**

UN number or ID number UN1073
UN proper shipping name Oxygen, refrigerated liquid
Transport hazard class(es) 2.2
Subsidiary hazard class 5.1
Marine pollutant indicator NP
EmS-No. F-C, S-W
Underlined EMS codes indicate additional advice is given in the emergency response procedures
Description UN1073, Oxygen, refrigerated liquid, 2.2 (5.1)

15. Regulatory information**International Inventories**

Contact supplier for inventory compliance status

US Federal Regulations**SARA 313**

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372.

SARA 311/312 Hazard Categories

Should this product meet EPCRA 311/312 Tier reporting criteria at 40 CFR 370, refer to Section 2 of this SDS for appropriate classifications.

CWA (Clean Water Act)

This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42).

CAA (Clean Air Act)

This product does not contain any substances regulated as pollutants pursuant to Clean Air Act (CAA).

CERCLA

This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material.

US State Regulations**California Proposition 65**

This product does not contain any Proposition 65 chemicals.

U.S. State Right-to-Know Regulations

Chemical name	New Jersey	Massachusetts	Pennsylvania
Oxygen 7782-44-7	X	X	X

U.S. EPA Label Information

EPA Pesticide Registration Number Not applicable

International Regulations

The Montreal Protocol on Substances that Deplete the Ozone Layer Not applicable

The Stockholm Convention on Persistent Organic Pollutants Not applicable

The Rotterdam Convention Not applicable

16. Other information

NFPA	Health hazards 0	Flammability 0	Instability 0	Special hazards OX
HMIS	Health hazards 0	Flammability 0	Physical hazards 2	Personal protection -

Key or legend to abbreviations and acronyms used in the safety data sheet

List may include phrases which are not applicable to this product

ACGIH	American Conference of Governmental Industrial Hygienists
ADN	Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways (Europe)
ADR	Agreement concerning the International Carriage of Dangerous Goods by Road (Europe)
AIIC	Australian Inventory of Industrial Chemicals
ATE	Acute Toxicity Estimate
ASTM	American Society for the Testing of Materials
bar	Biological Reference Values for Chemical Compounds in the Work Area
BAT	Biological tolerance values for occupational exposure
BEL	Biological exposure limits
bw	Body weight
Ceiling	Maximum limit value
CMR	Carcinogen, Mutagen or Reproductive Toxicant
DOT	Department of Transportation (United States)
DSL	Domestic Substances List (Canada)
EmS	Emergency Schedule
ENCS	Existing and New Chemical Substances (Japan)
EPA	U.S. Environmental Protection Agency
GHS	Globally Harmonized System
HMIS	Hazardous Materials Identification System
IARC	International Agency for Research on Cancer
IATA	International Air Transport Association
IBC	International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk
ICAO	International Civil Aviation Organization
IECSC	Inventory of Existing Chemical Substances in China
IMDG	International Maritime Dangerous Goods
IMO	International Maritime Organization
ISO	International Organization for Standardization
KECI	Korean Existing Chemicals Inventory
LC50	Lethal Concentration to 50% of a test population
LD50	Lethal Dose to 50% of a test population (Median Lethal Dose)
MARPOL	International Convention for the Prevention of Pollution from Ships
NFPA	National Fire Protection Association
NIOSH	National Institute for Occupational Safety and Health
n.o.s.	Not Otherwise Specified

NOAEC	No Observed Adverse Effect Concentration
NOAEL	No Observed Adverse Effect Level
NOELR	No Observable Effect Loading Rate
NTP	National Toxicology Program (United States)
NZIoC	New Zealand Inventory of Chemicals
OECD	Organization for Economic Cooperation and Development
OEL	Occupational exposure limits
OSHA	Occupational Safety and Health Administration of the US Department of Labor
PBT	Persistent, Bioaccumulative and Toxic substance
PICCS	Philippines Inventory of Chemicals and Chemical Substances
PMT	Persistent, Mobile and Toxic
PPE	Personal protective equipment
QSAR	Quantitative Structure Activity Relationship
RID	Agreement concerning the International Carriage of Dangerous Goods by Rail (Europe)
SADT	Self-Accelerating Decomposition Temperature
SAR	Structure-activity relationship
SARA	Superfund Amendments and Reauthorization Act
SDS	Safety Data Sheet
SL	Surface Limit
STEL	Short Term Exposure Limit
STOT RE	Specific target organ toxicity - Repeated exposure
STOT SE	Specific target organ toxicity - Single exposure
TCSI	Taiwan Chemical Substance Inventory
TDG	Transport of Dangerous Goods (Canada)
TSCA	Toxic Substances Control Act (United States)
TWA	Time-Weighted Average
UN	United Nations
VOC	Volatile organic compounds
vPvB	Very Persistent and Very Bioaccumulative
vPvM	Very Persistent and Very Mobile
As	Allergenic substance
DS	Dermal Sensitizer
Ot	Ototoxicant
pOt	Ototoxicant - potential to cause hearing disorders
PS	Photosensitizer
RS	Respiratory Sensitizer
S	Sensitizer
poS	Sensitizer - capable of causing occupational asthma
Sa	Simple asphyxiant
Sd	Skin designation
pSd	Skin designation - potential for cutaneous absorption
Sdv	Skin designation - vacated
Sk	Skin notation
dSk	Skin notation - danger of cutaneous absorption
pSk	Skin notation - potential for cutaneous absorption

Key literature references and sources for data used to compile the SDS

U.S. Agency for Toxic Substances and Disease Registry (ATSDR)
 U.S. Environmental Protection Agency ChemView Database
 European Food Safety Authority (EFSA)
 U.S. Environmental Protection Agency
 U.S. EPA Acute Exposure Guideline Level(s) (AEGL(s))
 U.S. Environmental Protection Agency Federal Insecticide, Fungicide, and Rodenticide Act
 U.S. Environmental Protection Agency High Production Volume Chemicals
 Food Research Journal

Hazardous Substance Database
International Uniform Chemical Information Database (IUCLID)
Japan GHS Classification
Australia National Industrial Chemicals Notification and Assessment Scheme (NICNAS)
NIOSH (National Institute for Occupational Safety and Health)
National Library of Medicine's ChemID Plus (NLM CIP)
National Library of Medicine's PubMed database (NLM PUBMED)
U.S. National Toxicology Program (NTP)
New Zealand's Chemical Classification and Information Database (CCID)
International Organization for Economic Co-operation and Development (OECD) Environment, Health, and Safety Publications
International Organization for Economic Co-operation and Development (OECD) High Production Volume Chemicals Program
International Organization for Economic Co-operation and Development (OECD) Screening Information Data Set
United Nations World Health Organization (WHO)

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Revision Note Change in classification. Company logo. Company Name. Company contact information.
Updated format. GHS Revision 7.

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End of Safety Data Sheet