



MATHESON

ask...The Gas Professionals™

Safety Data Sheet

Material Name OXYGEN, LIQUID

SDS ID: 00225011

Section 1 - IDENTIFICATION

Product Identifier: OXYGEN, LIQUID

Trade Names/Synonyms

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

Chemical Family

inorganic, gas

Recommended Use

industrial

Restrictions on Use

None known.

Manufacturer Information

MATHESON TRI-GAS, INC.
150 Allen Road, Suite 302
Basking Ridge, NJ 07920

General Information: 1-800-416-2505
Emergency #: 1-800-424-9300 (CHEMTREC)
Outside the US: 703-527-3887 (Call collect)

Section 2 - HAZARDS IDENTIFICATION

Classification in accordance with 29 CFR 1910.1200

Oxidizing Gases, Category 1
Gas under pressure, Refrigerated liquefied gas
Eye Damage / Irritation, Category 2A
Specific Target Organ Toxicity - Single Exposure, Category 3 (respiratory tract irritation)

GHS LABEL ELEMENTS

Symbol(s)



Signal Word

DANGER

Hazard Statement(s)

May cause or intensify fire; oxidizer
Contains refrigerated gas; may cause cryogenic burns or injury
Causes serious eye irritation
May cause respiratory irritation

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Precautionary Statement(s)

Prevention

Keep away from clothing and other combustible materials. Keep reduction valves free from grease and oil. Wear cold insulating gloves/face shield/eye protection. Avoid breathing gas. Wash thoroughly after handling. Use only outdoors or in a well-ventilated area.

Response

In case of fire, stop leak if safe to do so. Thaw frosted parts with lukewarm water. Do not rub affected area. Get immediate medical advice/attention. IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or doctor/physician if you feel unwell. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.

Storage

Store in a well-ventilated area. Keep container tightly closed. Store locked up.

Disposal

Dispose in accordance with all applicable regulations.

Hazard(s) Not Otherwise Classified

May cause frostbite upon sudden release of liquefied gas.

Section 3 - COMPOSITION / INFORMATION ON INGREDIENTS

CAS	Component	Percent
7782-44-7	OXYGEN, LIQUID	100

Section 4 - FIRST AID MEASURES

Description of Necessary Measures

Inhalation

If adverse effects occur, remove to uncontaminated area. Give artificial respiration if not breathing. Get immediate medical attention.

Skin

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

Eyes

Immediately flush eyes with plenty of water for at least 15 minutes. Then get immediate medical attention.

Ingestion

If swallowed, get medical attention.

Most Important Symptoms/Effects

Acute

frostbite, respiratory tract irritation, eye irritation

Delayed

No information on significant adverse effects.

Indication of Immediate Medical Attention and Special Treatment

Treat symptomatically and supportively.

Section 5 - FIRE FIGHTING MEASURES

Suitable Extinguishing Media

Use carbon dioxide and/or regular dry chemical.

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Large fires:, water spray or fog, 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 materials. Containers may rupture or explode if exposed to heat.

Hazardous Combustion Products

Combustion: miscellaneous decomposition products

Fire Fighting Measures

Move container from fire area if it can be done without risk. Damaged cylinders should be handled only by specialists. Do not direct water at source of leak or safety devices; icing may occur. Withdraw immediately in case of rising sound from venting safety device or any discoloration of tanks due to fire. Stay away from the ends of tanks. For fires in cargo or storage area: Cool containers with water from unmanned hose holder or monitor nozzles until well after fire is out. If this is impossible then take the following precautions: Keep unnecessary people away, isolate hazard area and deny entry. Let the fire burn. For tank, rail car or tank truck, evacuation radius: 800 meters (1/2 mile).

Special Protective Equipment and Precautions for Firefighters

Wear full protective fire fighting gear including self contained breathing apparatus (SCBA) for protection against possible exposure.

Section 6 - ACCIDENTAL RELEASE MEASURES

Personal Precautions, Protective Equipment and Emergency Procedures

Wear personal protective clothing and equipment, see Section 8. Avoid release to the environment.

Methods and Materials for Containment and Cleaning Up

Keep from contact with clothing and other combustible materials. Do not touch or walk through spilled material. Stop leak if possible without personal risk. Keep unnecessary people away, isolate hazard area and deny entry. If possible, turn leaking containers so that gas escapes rather than liquid. Do not direct water at spill or source of leak. Use water spray to reduce vapors or divert vapor cloud drift. Avoid allowing water runoff to contact spilled material. Prevent entry into sewers, drains, ditches, underground or confined spaces and waterways. Damaged cylinders should be handled only by specialists.

Section 7 - HANDLING AND STORAGE

Precautions for Safe Handling

Keep away from clothing and other combustible materials. Keep reduction valves free from grease and oil. Wear cold insulating gloves/face shield/eye protection. Avoid breathing gas. Wash thoroughly after handling. Use only outdoors or in a well-ventilated area.

Conditions for Safe Storage, including any Incompatibilities

Keep container tightly closed. Store in a well-ventilated area. Store locked up. Store and handle in accordance with all current regulations and standards. Subject to storage regulations: U.S. OSHA 29 CFR 1910.104. Protect from physical damage. Keep separated from incompatible substances. Store in a cool, dry place. Store outside or in a detached building.

Incompatibilities combustible materials, halo carbons, metals, bases, reducing agents, amines, metal salts, oxidizing materials

Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

Component Exposure Limits

ACGIH, EU, OSHA, and NIOSH have not developed exposure limits for any of this product's components.

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Component Biological Limit Values

There are no biological limit values for any of this product's components.

Appropriate Engineering Controls

Provide local exhaust ventilation system. Ensure compliance with applicable exposure limits.

Individual Protection Measures, such as Personal Protective Equipment

Eyes/Face Protection

Wear splash resistant safety goggles with a faceshield. Contact lenses should not be worn. Provide an emergency eye wash fountain and quick drench shower in the immediate work area.

Skin Protection

Wear appropriate protective, cold insulating clothing.

Glove Recommendations

Wear insulated gloves.

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.

For Unknown Concentrations or Immediately Dangerous to Life or Health -

Any supplied-air respirator with a full facepiece that is operated in a pressure-demand or other positive-pressure mode in combination with an auxiliary self-contained breathing apparatus operated in pressure-demand or other positive-pressure mode.

Any self-contained breathing apparatus that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode.

Section 9 - PHYSICAL AND CHEMICAL PROPERTIES

Physical State:	Gas	Appearance:	blue liquefied gas
Color:	blue	Physical Form:	cryogenic liquid
Odor:	odorless	Odor Threshold:	Not available
Taste:	tasteless	pH:	Not available
Melting/Freezing Point:	-218 °C	Boiling Point:	-183 °C
Flash Point:	not flammable	Decomposition:	Not available
Evaporation Rate:	Not available	LEL:	Not available
UEL:	Not available	Vapor Pressure:	760 mmHg @ -183 °C
Vapor Density (air = 1):	1.1	Specific Gravity (water=1):	1.1407 @ -183 °C
Water Solubility:	3.2 % @ 25 °C	Log KOW:	0.65
Auto Ignition:	Not available	Viscosity:	0.156 cP @-173 °C
Triple Point:	-218.6 °C @0.0015 ATM	Molecular Weight:	31.9988
Molecular Formula:	O ₂		

Other Property Information

Solvent Solubility

Soluble: alcohol

Section 10 - STABILITY AND REACTIVITY

Reactivity

Containers may rupture or explode if exposed to heat.

Chemical Stability

Stable at normal temperatures and pressure.

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Possibility of Hazardous Reactions

Will not polymerize.

Conditions to Avoid

Avoid contact with combustible materials. Containers may rupture or explode if exposed to heat.

Incompatible Materials

combustible materials, halo carbons, metals, bases, reducing agents, amines, metal salts, oxidizing materials

Hazardous Decomposition

Combustion: miscellaneous decomposition products

* * *Section 11 - TOXICOLOGICAL INFORMATION* * *

Acute and Chronic Toxicity

Component Analysis - LD50/LC50

The components of this material have been reviewed in various sources and no selected endpoints have been identified.

RTECS Acute Toxicity (selected)

The components of this material have been reviewed and RTECS publishes no data as of the date on this document.

Information on Likely Routes of Exposure

Inhalation

irritation, cough, sensitivity to light, changes in body temperature, nausea, difficulty breathing, irregular heartbeat, dizziness, disorientation, hallucinations, mood swings, tingling sensation, pain in extremities, tremors, visual disturbances, blindness, lung congestion, lung damage, convulsions, unconsciousness

Ingestion

ingestion of a gas is unlikely

Skin Contact

blisters, frostbite

Eye Contact

irritation, frostbite, blurred vision

Immediate Effects

frostbite, respiratory tract irritation, eye irritation

Delayed Effects

No information on significant adverse effects.

Medical Conditions Aggravated by Exposure

No data available.

Irritation/Corrosivity Data

eye irritation, Respiratory irritation

RTECS Irritation

The components of this material have been reviewed and RTECS publishes no data as of the date on this document.

Respiratory Sensitization

No data available.

Dermal Sensitization

No data available.

Carcinogenicity

Component Carcinogenicity

None of this product's components are listed by ACGIH, IARC, NTP, OSHA or DFG.

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RTECS Mutagenic

The components of this material have been reviewed, and RTECS publishes data for one or more components.

RTECS Reproductive Effects

The components of this material have been reviewed, and RTECS publishes the following endpoints:

OXYGEN, LIQUID (7782-44-7)

10 pph Inhalation Mouse TLo (24 hour, pregnant 8 day(s)); 10 pph Inhalation Rat TLo (9 hour, pregnant 22 day(s)); 10 pph Inhalation Rat TLo (12 hour, pregnant 22 day(s)); 12 pph Inhalation Woman TLo (10 minute(s), pregnant 26-39 week)

RTECS Tumorigenic

The components of this material have been reviewed, and RTECS publishes data for one or more components.

Specific Target Organ Toxicity - Single Exposure

respiratory system

Specific Target Organ Toxicity - Repeated Exposure

No data available.

Aspiration Hazard

Not applicable.

Section 12 - ECOLOGICAL INFORMATION

Component Analysis - Aquatic Toxicity

No LOLI ecotoxicity data are available for this product's components.

Persistence and Degradability

No data available.

Bioaccumulative Potential

No data available.

Mobility

No data available.

Section 13 - DISPOSAL CONSIDERATIONS

Disposal Methods

Dispose in accordance with all applicable regulations. Subject to disposal regulations: U.S. EPA 40 CFR 262. Hazardous Waste Number(s): D001.

Component Waste Numbers

The U.S. EPA has not published waste numbers for this product's components.

Section 14 - TRANSPORT INFORMATION

US DOT Information

Shipping Name: Oxygen, refrigerated liquid

UN/NA #: UN1073 **Hazard Class:** 2.2

Required Label(s): 2.2, 5.1

IMDG Information

Shipping Name: Oxygen, refrigerated liquid

UN #: UN1073 **Hazard Class:** 2.2

Required Label(s): 2.2, 5.1

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Section 15 - REGULATORY INFORMATION

Component Analysis

U.S. Federal Regulations

None of this products components are listed under SARA Sections 302/304 (40 CFR 355 Appendix A), SARA Section 313 (40 CFR 372.65), CERCLA (40 CFR 302.4), TSCA 12(b), or require an OSHA process safety plan.

SARA 311/312 Hazardous Categories

Acute Health: Yes **Chronic Health:** No **Fire:** Yes **Pressure:** Yes **Reactive:** No

U.S. State Regulations

The following components appear on one or more of the following state hazardous substances lists:

Component	CAS	CA	MA	MN	NJ	PA
OXYGEN, LIQUID	7782-44-7	No	Yes	No	Yes	Yes

Not regulated under California Proposition 65

Component Analysis - Inventory

Component	CAS	US	CA	EU	AU	PH	JP	KR	CN	NZ
OXYGEN, LIQUID	7782-44-7	Yes	DSL	EIN	Yes	Yes	No	Yes	Yes	Yes

Section 16 - OTHER INFORMATION

NFPA Ratings: Health: 3 Fire: 0 Reactivity: 0 Other: Oxidizer

Hazard Scale: 0 = Minimal 1 = Slight 2 = Moderate 3 = Serious 4 = Severe

Key / Legend

ACGIH - American Conference of Governmental Industrial Hygienists; ADR - European Road Transport; AU - Australia; BOD - Biochemical Oxygen Demand; C - Celsius; CA - Canada; CAS - Chemical Abstracts Service; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CN - China; CPR - Controlled Products Regulations; DFG - Deutsche Forschungsgemeinschaft; DOT - Department of Transportation; DSL - Domestic Substances List; EEC - European Economic Community; EINECS - European Inventory of Existing Commercial Chemical Substances; EPA - Environmental Protection Agency; EU - European Union; F - Fahrenheit; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; ICAO - International Civil Aviation Organization; IDL - Ingredient Disclosure List; IDLH - Immediately Dangerous to Life and Health; IMDG - International Maritime Dangerous Goods; JP - Japan; Kow - Octanol/water partition coefficient; KR - Korea; LEL - Lower Explosive Limit; LOLI - List Of Lists™ - ChemADVISOR's Regulatory Database; MAK - Maximum Concentration Value in the Workplace; MEL - Maximum Exposure Limits; NFPA - National Fire Protection Agency; NIOSH - National Institute for Occupational Safety and Health; NJTSR - New Jersey Trade Secret Registry; NTP - National Toxicology Program; NZ - New Zealand; OSHA - Occupational Safety and Health Administration; PH - Philippines; RCRA - Resource Conservation and Recovery Act; RID - European Rail Transport; RTECS - Registry of Toxic Effects of Chemical Substances®; SARA - Superfund Amendments and Reauthorization Act; STEL - Short-term Exposure Limit; TDG - Transportation of Dangerous Goods; TSCA - Toxic Substances Control Act; TWA - Time Weighted Average; UEL - Upper Explosive Limit; US - United States

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Other Information

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