SAFETY DATA SHEET

OXYGEN

Infosafe No.: LQ96K
Version No.: 1.0
ISSUED Date : 13/02/2020
ISSUED by: Bromic Industrial

1. IDENTIFICATION

GHS Product Identifier
OXYGEN

Company Name
Bromic Industrial

Address
18 Technology Drive Irvine
California 92618 UNITED STATES

Telephone/Fax Number
Telephone: 1800 301 1293

Emergency phone number
24/7 emergency contact: CHEMTREC 1800 424 9300

E-mail Address
plumbing@bromic.com

Recommended use of the chemical and restrictions on use
Brazing applications.

2. HAZARD IDENTIFICATION

GHS classification of the substance/mixture
This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).
Oxidizing Gases: Category 1
Gases under Pressure: Compressed Gas

Signal Word (s)
DANGER

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

Pictogram (s)
Gas cylinder, Flame over circle

Precautionary statement – Prevention
Keep/Store away from clothing and other combustible materials. Keep reduction valves/valves and fittings free from oil and grease.

Precautionary statement – Response
In case of fire: Stop leak if safe to do so.

Precautionary statement – Storage
Protect from sunlight. Store in a well-ventilated place.

Other Information

Contact with liquefied gas may cause frostbite.
May react violently with combustible materials.
Continuous inhalation of high concentrations of may cause chest tightness, burning pains and coughing. Other symptoms of hyperoxia include cramps, nausea, dizziness, hypothermia, loss of vision, fainting spells and convulsions.
HMIS rating: Not available

3. COMPOSITION/INFORMATION ON INGREDIENTS

Ingredients

Name	CAS	EINECS	Proportion
Oxygen	7782-44-7	231-956-9	100 %

4. FIRST-AID MEASURES

Inhalation
If inhaled, remove affected person from contaminated area. Keep at rest until recovered. If symptoms develop and/or persist seek medical attention.

Ingestion
Not considered a potential route of exposure.

Skin
Remove all contaminated clothing immediately. Clothing frozen to the skin should be thawed before being removed. Wash affected area thoroughly with soap and water. For Frostbite: Flush affected areas with lukewarm water. Do not use hot water. Treat as thermal burns. Seek immediate medical attention.

Eye contact
If eye tissue is frozen, seek IMMEDIATE medical attention. If tissue is not frozen, immediately irrigate with copious amounts of water for at least 15 minutes. Remove contact lenses. Eyelids to be held open. Seek medical attention.

First Aid Facilities
Eyewash and normal washroom facilities.

Advice to Doctor
Treat symptomatically.

Other Information
For advice in an emergency, contact a Poisons Information Centre or a doctor at once.

5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media
Carbon dioxide, dry chemical, foam, water fog or water mist.

Unsuitable Extinguishing Media
Do not use water jet as an extinguisher, as this will spread the fire.

Hazards from Combustion Products
Under fire conditions this product may emit toxic and/or irritating fumes and gases.

Specific Hazards Arising From The Chemical
Contents under pressure. Pressurized container may explode when exposed to heat or flame.
Greatly increases the burning rate of combustible materials. Fire may produce irritating, corrosive and/or toxic gases. During fire, gases hazardous to health may be formed.

Decomposition Temperature
Not available

Precautions in connection with Fire
Fire fighters should wear full protective clothing and self-contained breathing apparatus (SCBA) operated in positive pressure mode. In case of fire the product may be violently or explosively reactive. Use water spray to disperse vapors. This product should be prevented from entering drains and watercourses.

Oxygen strongly supports combustion.

In case of fire: Stop leak if safe to do so. Allow gas to burn if flow cannot be shut off immediately.

Apply water from safe distance to cool container and protect surrounding area.

Cylinders can burst violently when heated, due to excess pressure build-up. Remove pressurized gas cylinders from the immediate vicinity. Move containers from fire area if you can do so without risk. Do not direct water at source of leak or safety devices as icing may occur. Use water spray to cool unopened containers. Evacuate area and fight fire from a safe distance.

Greatly increases the burning rate of combustible materials.

Other Information
NFPA rating:
Health Hazards: 1
Flammability: 0
Instability: 3
Special Hazards: OX

6. ACCIDENTAL RELEASE MEASURES

Emergency Procedures
Remove all sources of ignition. Increase ventilation. Evacuate all unprotected personnel. Use self-contained breathing apparatus (S.C.B.A) and full protective clothing to minimise exposure. Allow gas to vent safely to atmosphere, preferably in well ventilated, remote location. Monitor oxygen concentration in confined spaces. Check for leaks using pressure drop test or soapy water on joints and outlets. Shut cylinder valve to stop leak if possible and safe to do so. Check gas concentration to ensure area is safe before removing protective equipment. Damaged gas cylinders should be returned to the supplier.

7. HANDLING AND STORAGE

Handling and storage
Use in a well ventilated area. Wear appropriate personal protective equipment and clothing to prevent exposure. Do not handle, store or open near an open flame, sources of heat or sources of ignition. Keep away from combustible material. Use smallest possible amounts in designated areas with adequate ventilation. Maintain high standards of personal hygiene ie. washing hands prior to eating, drinking, smoking or using toilet facilities. DO NOT enter confined spaces where gas may have collected. Suck back of water into the container must be prevented. Do not allow back feed into the container. Use only properly specified equipment which is suitable for this product, its supply pressure and temperature. Contact your gas supplier if in doubt. Refer to supplier's container handling instructions. Do not eat, drink or smoke when using this product. Routinely wash work clothing and protective equipment to remove contaminants.

Precautions for Safe Handling
Protect containers against physical damage. Store in a cool, dry, well-ventilated place, low fire risk area. Protect from extremes of temperature and weather. Keep material away from sparks, flames and other ignition sources. Protect against direct sunlight. Keep away from foodstuffs, drinks and tobacco. Do not allow any part of a cylinder to be exposed above 50 °C (122 °F). Storage areas should be kept clean and free from flammable materials. Do not store near combustible materials. Take precautionary measures against static discharge. Ensure that containers are properly vented to prevent build up of pressure. Ensure that storage conditions comply with applicable local and national regulations.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Occupational exposure limit values
No exposure standards have been established for the mixture. However, over-exposure to some chemicals may result in enhancement of pre-existing adverse medical conditions and/or allergic reactions and should be kept to the least possible levels.

Biological Limit Values
No biological limits allocated.

Appropriate Engineering Controls
This substance is hazardous and should be used with a local exhaust ventilation system, drawing vapors away from workers' breathing zone. If the engineering controls are not sufficient to maintain concentrations of vapors/mists below the exposure standards, suitable respiratory protection must be worn.

Respiratory Protection
If engineering controls are not effective in controlling airborne exposure then an approved respirator with a replaceable filter should be used. Refer to relevant regulations for further information concerning respiratory protective requirements.

Eye Protection
Safety glasses with side shields, chemical goggles or full-face shield as appropriate should be used. Final choice of appropriate eye/face protection will vary according to individual circumstances. Eye protection devices should conform to relevant regulations.

Hand Protection
Wear gloves of impervious material. Final choice of appropriate gloves will vary according to individual circumstances i.e. methods of handling or according to risk assessments undertaken. Occupational protective gloves should conform to relevant regulations.

Body Protection
Suitable protective workwear, e.g. cotton overalls buttoned at neck and wrist is recommended. Chemical resistant apron is recommended where large quantities are handled.

9. PHYSICAL AND CHEMICAL PROPERTIES

Form
Compressed gas

Appearance
Colorless gas

Color
Colorless

Odor
Odorless

Decomposition Temperature
Not available

Boiling Point
-182.96 °C to -183 °C
(-297.33 °F to -297.4 °F)

Solubility in Water
0.0489 (21 °C)
(69.8 °F)

Specific Gravity
1.1049 (21 °C)
(69.8 °F)

pH
Not available

Vapor Pressure
4053 kPa (-124.1 °C)
(-191.4 °F)

Vapor Density (Air=1)
1.43
1.105

Coefficient Water/Oil Distr.
Not available

Odor Threshold
Not available

Viscosity
Refer to Section 9: Kinematic Viscosity and Dynamic Viscosity

Partition Coefficient: n-octanol/water
Not available

Density
0.001 g/cm³
1.14 g/cm³
71.23 lb/ft³ (Liquid Density & Boiling Point)

Flash Point
Not applicable

Flammability
Non flammable

Auto-Ignition Temperature
Not available

Explosion Limit - Upper
Not applicable

Explosion Limit - Lower
Not applicable

Molecular Weight
32 g/mol

Oxidizing Properties
Oxidizing.

Kinematic Viscosity
Not available

Dynamic Viscosity
Not available

Melting/Freezing Point
-218.4 °C
(-361.12 °F)

Other Information
Critical temperature: -118.6 °C (-181.48 °F)
Molecular formula: O2

10. STABILITY AND REACTIVITY

Chemical Stability
Stable under normal conditions of storage and handling.

Reactivity and Stability
Reacts with incompatible materials.

Conditions to Avoid
Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Extremes of temperature and direct sunlight. Keep away from combustible material.

Incompatible materials
Oil and grease can spontaneously ignite at low temperatures in oxygen enriched atmospheres. Many other materials, which do not burn in air, will vigorously burn in pure oxygen. All non-metals must be oxygen compatible. Metals can be ignited and will continue to burn in pure oxygen atmospheres under specific conditions of temperature and pressure. Strong reducing agents.

Hazardous Decomposition Products
Greatly increases the burning rate of combustible materials. Fire may produce irritating, corrosive and/or toxic gases. During fire, gases hazardous to health may be formed.

Hazardous Polymerization
Will not occur.

11. TOXICOLOGICAL INFORMATION

Toxicology Information
No toxicity data available for this material.

Ingestion
Ingestion unlikely due to form of product.

Inhalation
Inhalation of product vapors may cause irritation of the nose, throat and respiratory system.
Continuous inhalation of high concentrations of may cause chest tightness, burning pains and coughing. Other symptoms of hyperoxia include cramps, nausea, dizziness, hypothermia, loss of vision, fainting spells and convulsions.

Skin
May be irritating to skin. The symptoms may include redness, itching and swelling. May cause frostbite injuries to skin due to uncontrolled release of compressed gas resulting in redness, tissue destruction.

Eye
May be irritating to eyes. The symptoms may include redness, itching and tearing. May cause frostbite injuries to eyes due to uncontrolled release of compressed gas resulting in stinging, tearing, blurred vision and possibly permanent damage to eyes.

Respiratory sensitisation
Not expected to be a respiratory sensitiser.

Skin Sensitisation
Not expected to be a skin sensitiser.

Germ cell mutagenicity
Not considered to be a mutagenic hazard.

Carcinogenicity
Not considered to be a carcinogenic hazard.
This product does not contain any carcinogens or potential carcinogens as listed by OSHA, IARC or NTP.

Reproductive Toxicity
Not considered to be toxic to reproduction.

STOT-single exposure
Not expected to cause toxicity to a specific target organ.

STOT-repeated exposure
Not expected to cause toxicity to a specific target organ.

Aspiration Hazard
Not expected to be an aspiration hazard.

12. ECOLOGICAL INFORMATION

Ecotoxicity
No ecological data available for this material.

Persistence and degradability
Not available

Mobility
Not available

Bioaccumulative Potential
Not available

Other Adverse Effects
No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

Environmental Protection
Prevent this material entering waterways, drains and sewers.

13. DISPOSAL CONSIDERATIONS

Disposal considerations
The disposal of the spilled or waste material must be done in accordance with applicable local and national regulations.

14. TRANSPORT INFORMATION

UN Number (Air Transport, ICAO)
1072

IATA/ICAO Proper Shipping Name
OXYGEN, COMPRESSED

IATA/ICAO Hazard Class
2.2

IATA/ICAO Sub Risk
5.1

IATA/ICAO Symbol
Non Flammable, Non Toxic Gas, Oxidizing Agent

IMDG UN No
1072

IMDG Proper Shipping Name
OXYGEN, COMPRESSED

IMDG Hazard Class
2.2

IMDG Sub. Risk
5.1

IMDG Marine pollutant
No

DOT UN NO
1072

DOT Proper Shipping Name
OXYGEN, COMPRESSED

DOT Class
2.2

DOT Special Requirements (Special)
110,A14

DOT Exceptions (Exceptions)
306

DOT Subsidiary Risk
5.1

DOT Non-Bulk Requirements (NON_BULK)
302

DOT Bulk Requirements (BULK)
314,315

DOT Max. Passgr. Air/Rail. (MAXAIR)
75 kg

DOT Max. Cargo Only Air/Rail. (MAXCARGO)
150 kg

DOT Stowage (Stowage)
A

Transport in Bulk
Not available

Special Precautions for User
Not available

15. REGULATORY INFORMATION

California Proposition 65
Not Listed

SARA Section 302
Not Listed

SARA (311,312) Hazard Class
Oxidizer
Gas under pressure (compressed gas)

SARA (313) Chemicals
Not Listed

USA (TSCA)
All components of this product are listed on the Inventory or exempted.

Reportable Quantity
Not Listed

16. OTHER INFORMATION

Date of preparation or last revision of SDS
SDS Created: February 2020

References
ANSI Z400.1/Z129.1-2010. American National Standard for Hazardous Workplace Chemicals – Hazard Evaluation and Safety Data Sheet and Precautionary Labeling Preparation.
Adopted biological exposure determinants, American Conference of Industrial Hygienists (ACGIH).
OSHA Table Z-1 Limits for Air Contaminants (June 30, 1993)(29 CFR 1910.1000)(1971 Permissible Exposure Limits (PELs)).

Contact Person/Point
Although the information and recommendations set forth in this SDS are presented in good faith and are believed to be correct as of the date of this SDS, Bromic Pty. Ltd., makes no representations as to the completeness or accuracy thereof. Information is supplied on the conditions that the persons receiving and using it will make their own determination as to the suitability for their purpose prior to use. In no event will Bromic Pty. Ltd. or any affiliate thereof be responsible for damages of any nature whatsoever resulting from the use or reliance on the information set forth in the SDS.

END OF SDS