

Head Office: Refrigeration & Oxygen Co. Ltd. P.O. Box 501 Safat 13006, Kuwait	Email Id: info@rocq8.com Web Address: www.airtecgulf.com
Dubai Office: Emirates Industrial Gases Co. LLC. P.O. Box 3763, Dubai, UAE	Emergency Phone Kuwait +965 1844 844 Dubai +971 8005414 Qatar +974 44114603/4/5 Bahrain +973 17400469/473
Qatar Office: Qatar Oxygen Co. W.L.L P.O. Box 22386, Doha, Qatar	Facsimile Phone Kuwait +965 2484 3020 Dubai +971 42664168 Qatar +974 44114350 Bahrain +973 17400391
Bahrain Office: Bahrain Medical & Industrial Gas Plant P.O.Box 80738, Kingdom of Bahrain	

1. CHEMICAL PRODUCT

PRODUCT NAME: SULFUR DIOXIDE SYNONYMS: Sulfurous Acid Anhydrous

2. COMPOSITION, INFORMATION ON INGREDIENTS

Ingredient Name	Formula	CAS #	Concentration	Exposure Limits (PPM)			
				ACGIH TLV	OSHA PEL	MAC	Other STEL
SULFUR DIOXIDE	SO2	7446-09-5	99+%	2	5	0.50	0.25

Note: NE = NONE ESTABLISHED S/A = SIMPLE ASPHYXIANT

3. HAZARD IDENTIFICATION

* * * EMERGENCY OVERVIEW * * *

Corrosive liquid and gas under pressure.
Can cause eye, skin, and respiratory tract burns.

POTENTIAL HEALTH EFFECTS

ROUTES OF ENTRY: Inhalation, Eye, Skin

ACUTE EFFECTS: Sulfur dioxide is corrosive and irritating to respiratory tract, skin, and eyes. Symptoms include burning sensation, coughing, wheezing, shortness of breath, headache, nausea, and vomiting. May produce bronchitis, chemical pneumonitis, and pulmonary edema. Contact with liquid can cause severe burns of skin and eyes. Eye contact may result in destruction of eye tissue. Excessive exposure can be fatal.

CHRONIC EFFECTS: Pulmonary disease or loss of pulmonary functions.

MEDICAL CONDITIONS AGGRAVATED BY OVEREXPOSURE: Respiratory problems.

OTHER EFFECTS OF OVEREXPOSURE: None

CARCINOGENICITY (US ONLY):

NTP - No
IARC MONOGRAPHS - No
OSHA REGULATED - No

4. FIRST AID MEASURES

INHALATION: Immediately remove victim to fresh air. If breathing has stopped, give artificial respiration. If breathing is difficult, give oxygen.

EYE CONTACT: Immediately flush with copious amounts of water for at least 15 minutes.

SKIN CONTACT: Immediately flush with copious amounts of water for at least 15 minutes while removing contaminated clothing.

INGESTION: None

IN EVENT OF EXPOSURE, CONSULT A PHYSICIAN

NOTE TO PHYSICIAN: Inhaled sympathomimetic bronchodilators are useful if bronchospasm occurs. Endotracheal intubation or tracheostomy may be needed if upper airway is obstructed.

5. FIRE FIGHTING MEASURES

FLASH POINT: Nonflammable

AUTOIGNITION TEMPERATURE: N/Ap

FLAMMABLE LIMITS: Nonflammable

LOWER:

UPPER:

EXTINGUISHING MEDIA: Use what is appropriate for surrounding fire.

SPECIAL FIRE FIGHTING INSTRUCTION AND EQUIPMENT: Wear self-contained breathing apparatus and full protective clothing. Keep fire exposed cylinders cool with water spray. If possible, stop the product flow.

HAZARDOUS COMBUSTION PRODUCTS: None

UNUSUAL FIRE AND EXPLOSION HAZARDS: Anhydrous sulfur dioxide reacts with chlorates to produce chlorine peroxide which presents an explosive hazard. Cylinder rupture may occur under fire conditions.

6. ACCIDENTAL RELEASE MEASURES

CLEAN UP PROCEDURES: Evacuate and ventilate area. Use a self-contained breathing apparatus in case of emergency or non-routine use. Shut off source if possible and remove source of heat. Remove leaking cylinder to exhaust hood or safe outdoor area.

SPECIALIZED EQUIPMENT: None

7. HANDLING AND STORAGE

PRECAUTIONS TO BE TAKEN IN HANDLING: Secure cylinder when using to protect from falling. Use suitable hand truck to move cylinders.

PRECAUTIONS TO BE TAKEN IN STORAGE: Store in well ventilated areas. Keep valve protection cap on cylinders when not in use.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

ENGINEERING CONTROLS: Provide adequate general and local exhaust ventilation to maintain concentration below exposure limits.

EYE / FACE PROTECTION: Safety glasses

SKIN PROTECTION: Impervious gloves, coveralls, boots, and/or other resistant protective clothing.

RESPIRATORY PROTECTION: In case of leakage, use self-contained breathing apparatus.

OTHER PROTECTIVE EQUIPMENT: Safety shoes when handling cylinders.

9. PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE: Colorless

ODOR: Irritating pungent odor.

PHYSICAL PRESSURE: Gas

VAPOR PRESSURE: @21.1 deg.C: 34.4 psig

VAPOR DENSITY (AIR=1): 2.21

BOILING POINT (C): -10

SOLUBILITY IN WATER: Soluble

SPECIFIC GRAVITY (H₂O=1): 1.5

EVAPORATION RATE: Gas

ODOR THRESHOLD: 0.33 to 5 ppm

10. STABILITY AND REACTIVITY

STABILITY: Stable under normal storage conditions.

CONDITIONS TO AVOID: Storage in poorly ventilated areas. Storage near a heat source.

MATERIALS TO AVOID: Avoid aluminum, cesium oxide, chlorates, chromium, iron oxide, fluorine, manganese, potassium chlorate, sodium, tin oxide, bases, oxidizing materials, unsaturated organics. Will react with water or steam to produce

toxic and corrosive fumes.

HAZARDOUS POLYMERIZATION: Will not occur.

HAZARDOUS DECOMPOSITION: Sulfur trioxide. Sulfur dioxide dissolves in water to form corrosive sulfuric acid.

11. TOXICOLOGICAL INFORMATION

LETHAL CONCENTRATION (LC50): 2520 ppm, rat 1 hour.

LETHAL DOSE 50 (LD50): N/Ap

TERATOGENICITY: N/Ap

REPRODUCTIVE EFFECTS: N/Ap

MUTAGENICITY: N/Ap

12. ECOLOGICAL INFORMATION

No adverse ecological effects are expected.

13. DISPOSAL CONSIDERATIONS

WASTE DISPOSAL METHOD: Try to prevent any direct release of sulfur dioxide to the atmosphere. When leaks cannot be stopped, discharge cylinders at a controlled rate into a large amount of water solution of 15% NaOH or other alkali. The alkaline sulfite solution can be oxidized to inert sulfate salts or shipped for disposal. Non-returnable cylinders must not be refilled.

14. TRANSPORT INFORMATION

CONCENTRATION: 99+%

DOT DESCRIPTION (US ONLY):

PROPER SHIPPING NAME: Sulfur dioxide
HAZARD CLASS: 2.3 (poison), Hazard Zone C
IDENTIFICATION NUMBER: UN1079
REPORTABLE QUANTITIES: None
LABELING: POISON GAS, CORROSIVE

ADR / RID (EU Only): Class 2, 2TC

SPECIAL PRECAUTIONS: Cylinders should be transported in a secure upright position in a well ventilated truck.

15. REGULATORY INFORMATION

OSHA: Process Safety Management: Materials are not listed in appendix A of 29 CFR 1910.119 as highly hazardous chemicals.

TSCA: Material is listed in TSCA inventory.

SARA: The threshold planning quantity for this material is 500 lbs.

EU NUMBER: 231-195-2

NUMBER IN ANNEX 1 OF DIR 67/548: Material is listed in annex 1.

EU CLASSIFICATION: N/Av

R: 23-36/37

S: 7/9-44

16. OTHER INFORMATION

OTHER PRECAUTIONS: Protect containers from physical damage. Do not deface cylinders or labels. Cylinders should be refilled by qualified producers of compressed gas. Shipment of a compressed gas cylinder which has not been filled by the owner or with his written consent is a violation of federal law (49 CFR).

ABBREVIATIONS: N/Av - Not Applicable, N/Av - Not Available, NE - None Established

Use proper connections; do not use adapters. Do not force fit!!

DISCLAIMER

The information and recommendations in this Material Safety Data Sheet relate only to the specific material mentioned herein and do not relate to use otherwise ie.in combination with any other material or in any process.

The information and recommendations herein are taken from our extensive experiences and the data contained in recognized references and believed by us to be true. Refrigeration group of companies make no warranties either expressed or implied with respect there to and assume no liability in connection with the use of such information and recommendation.