

Miragas Co., Ltd.

SDS preparation date: 2016-5-15

SDS revision date: 2021-7-26

Section 1. Product and Company Identification

Chemical Name: sulfur dioxide; sulfurous acid anhydride

CAS No.: 7446-09-5

Molecular formula: SO₂

Molecular weight: 64.06

Supplier Name: Miragas Co. Ltd.

Address of Supplier: Zhucun Industrial Zone, Yichuan Town, Luoyang City, Henan Province, PRC

Telephone Number: +86 379-69581179

Emergency Telephone Number: +86 379-69581176-887

Fax Number: +86 379-69581180

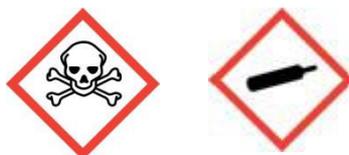
Email Address: Bureau@miragases.com

Section 2. Hazards Identification

HAZARD CLASS: 2.3 (8)

GHS label elements:

Hazard pictograms:



Signal word: Danger

Route of invasion: respiratory tract

Health hazards: it is easily absorbed by the moist mucosal surface to produce sulfite and sulfuric acid. It has strong irritation to eyes and respiratory mucosa. Massive inhalation can cause pulmonary edema, laryngeal edema, vocal cord spasm and asphyxia. Acute poisoning: in case of mild poisoning, tears, photophobia, cough, burning pain of pharynx and throat, etc; Severe poisoning can cause pulmonary edema within a few hours; Extremely high concentration inhalation can cause reflex glottic spasm and asphyxia. Inflammation or burns due to skin or eye contact. Chronic effects: long-term low concentration exposure can cause headache, dizziness, fatigue and other systemic symptoms, as well as chronic rhinitis, pharyngitis, bronchitis, decreased sense of smell and taste. A few workers have dental etching.

Environmental hazard: it can cause serious pollution to the atmosphere.

Fire and explosion hazard: this product is non combustible. It is toxic and highly irritating.



Section 3. Composition, Information on Ingredients

Substance/mixture: simple substance

Chemical name: sulfur dioxide

Purity: $\geq 99.999\%$

CAS number: 7446-09-5

Shelf life: 24 months

Section 4. First Aid Measures

Skin contact: take off contaminated clothes immediately and rinse with a large amount of flowing water. See a doctor.

Eye contact: lift the eyelids and rinse with flowing water or normal saline. See a doctor.

Inhalation: quickly leave the site to a place with fresh air. Keep the respiratory tract unobstructed. If breathing is difficult, give oxygen. If breathing stops, perform artificial respiration immediately. See a doctor.

Ingestion: it will not be ingested in this way.

Section 5. Fire Fighting Measures

Hazardous characteristics: non combustible. In case of high heat, the internal pressure of the container will increase, and there is a risk of cracking and explosion.

Harmful combustion products: no data available.

Fire extinguishing method: This product is non combustible. Firefighters must wear filter gas masks (full face masks) or isolation respirators, and wear full body fire and gas suits to extinguish the fire in the upwind direction. Cut off the air supply. Spray water to cool the container and move the container from the fire site to an open place if possible. Fire extinguishing agents: fog water, foam, carbon dioxide.

Section 6. Accidental Release Measures

Emergency treatment: quickly evacuate the personnel in the leakage contaminated area to the windward and immediately isolate them. In case of small leakage, isolate them for 150m and in case of large leakage, isolate them for 450m, and strictly restrict access. It is recommended that emergency treatment personnel wear self-contained positive pressure respirator and anti-virus clothing. Enter the site upwind. Cut off the source of leakage as much as possible. Cover the sewer near the leakage point with industrial covering or adsorption / absorbent to prevent gas from entering. Reasonable ventilation to accelerate diffusion. Spray water dilute and dissolve. Build embankments or dig pits to receive a large amount of wastewater. If possible, use a trap to pass the gas through the sodium hypochlorite solution. The leaking container shall be properly handled and reused after repair and inspection.

Environmental protection measures: fully recycle the waste gas and avoid discharging it into the air.

Storage and removal methods of leaked chemicals and disposal materials used: reasonable ventilation to accelerate diffusion.

Preventive measures to prevent secondary hazards: wear self-contained breathing equipment, turn off the air source, remove all possible fire sources, ventilate, and quickly evacuate irrelevant personnel. Install corresponding



gas leakage alarm device.

Section 7. Handling and Storage

Precautions for operation: strictly seal, provide sufficient local exhaust and comprehensive ventilation. Operators must receive special training and strictly abide by the operating procedures. It is recommended that operators wear self-priming filter gas masks (full face masks), polyethylene gas suits and rubber gloves. Keep away from inflammables and combustibles. Prevent gas leakage into the air of the workplace. Avoid contact with oxidant and reductant. Load and unload gently during handling to prevent damage to steel cylinders and accessories. Equipped with leakage emergency treatment equipment.

Storage precautions: store in a cool and ventilated warehouse. Keep away from fire and heat source. The storage temperature should not exceed 52 °C. It shall be stored separately from inflammables, oxidants, reducing agents and edible chemicals, and mixed storage shall not be allowed. The storage area shall be equipped with leakage emergency treatment equipment.

Section 8. Exposure Controls, Personal Protection

Occupational exposure limits

China MAC(mg/m³): 15

Soviet Union MAC(mg/m³): 10

TLVTN: OSHA 5ppm,13mg/m³; ACGIH 2ppm,5.2mg/m³

TLVWN: ACGIH 5ppm,13mg/m³

Monitoring method: pararosaniline hydrochloride colorimetry; Formaldehyde buffer pararosaniline hydrochloride Spectrophotometry.

Engineering control: strictly sealed to provide sufficient local and overall ventilation. Provide safety shower and eye wash equipment.

Respiratory protection: when the concentration in the air exceeds the standard, wear a self-priming filter gas mask (full mask). In case of emergency rescue or evacuation, it is recommended to wear positive pressure self-contained respirator.

Eye protection: respiratory protection has been provided.

Body protection: wear polyethylene anti-virus clothing.

Hand protection: wear rubber gloves.

Other protection: smoking, eating and drinking are prohibited at the work site. Shower and change clothes after work. Keep good hygiene habits.

Section 9. Physical and Chemical Properties

Main component: sulfur dioxide

Appearance and properties: colorless gas, odor.

Melting point(°C): -75.5

Boiling point(°C): -10

Relative density(water=1): 1.43

Relative vapor density(air=1): 2.26



Saturated vapor pressure(kPa): 338.42(21.1°C)

Heat of combustion(kJ/mol): N/A

Critical temperature(°C): 157.8

Critical pressure(MPa): 7.87

Logarithm of octanol / water partition coefficient: no data

Flash point(°C): N/A

Ignition temperature(°C): N/A

Upper explosion limit %(V/V): N/A

Lower explosion limit %(V/V): N/A

Solubility: soluble in water and ethanol.

Main uses: used for manufacturing sulfuric acid and insurance powder.

Section 10. Stability and Reactivity

Stability: stable

Conditions to be avoided: high temperature, humidity

Hazardous reaction: no data

Hazardous decomposition substances: no data available

Prohibited substances: strong reductant, strong oxidant, flammable or combustible substances.

Section 11. Toxicological Information

Acute toxicity: no data available

Skin irritation or corrosion: inflammation or burns may occur in skin contact.

Eye irritation or corrosion: it has a strong irritating effect on the eyes.

Germ cell mutagenicity: no data

Carcinogenicity: no data

Reproductive toxicity: no data

Specific target organ systemic toxicity: no data

Toxicokinetic, metabolic and distribution information: no data

Inhalation hazard: strong irritation to respiratory mucosa.

Section 12. Ecological Information

Ecotoxicity: no data

Persistence and degradability: no data

Potential bioaccumulation: no data

Mobility: no data

Other harmful effects: this substance can seriously pollute the atmosphere, and the acid rain formed by it is particularly harmful to plants.



Section 13. Disposal Considerations

Waste disposal method:

Product: pass the waste gas into soda ash solution, neutralize it with calcium hypochlorite, and then flush it into the wastewater system with water. Return the empty container to the supplier.

Unclean packaging: return contaminated containers to the supplier or dispose of them according to national and local regulations.

Precautions for disposal: refer to relevant national and local regulations before disposal.

Section 14. Transport Information

United Nations Hazardous Chemicals Code: 23013

UN Number: 1079

SHIPPING LABEL(s): TOXIC GAS; CORROSIVE SUBSTANCE

DOT/IMO SHIPPING NAME: SULFUR DIOXIDE

Packing method: steel cylinder; Ordinary wooden case outside ampoules.

Precautions for transportation: the railway transportation time limit of this product shall be transported by the tank truck provided by the pressure liquefied gas enterprise, which shall be reported to the relevant departments for approval before shipment. During railway transportation, the dangerous goods shall be loaded in strict accordance with the dangerous goods loading table in the dangerous goods transportation rules of the Ministry of railways.

When the steel cylinder is used for transportation, the safety helmet on the steel cylinder must be worn. The steel cylinder is generally placed horizontally, and the bottle mouth shall be in the same direction without crossing; The height shall not exceed the protective fence of the vehicle, and shall be firmly clamped with triangular wood cushion to prevent rolling. It is strictly prohibited to mix with combustibles or combustibles, oxidants, reducing agents, edible chemicals, etc. In summer, it shall be transported in the morning and evening to prevent sunlight exposure. During highway transportation, it is necessary to drive according to the specified route, and it is forbidden to stay in residential areas and densely populated areas. It is forbidden to slip away during railway transportation.

Section 15. Regulatory Information

Regulatory information:

Regulations on the safety management of hazardous chemicals (Order No. 591 of the State Council of the people's Republic of China)

Supervision Regulation on safety technology of gas cylinder (TSG r0006-2014)

Contents and project sequence of technical instructions for chemical safety (GB / t16483-2008)

General technical conditions for transport packaging of dangerous goods (GB 12463-2009)

General rules for classification and hazard publicity of chemicals (GB 13690-2009)

Packaging marks for dangerous goods (GB 190-2009)

Classification and product name number of dangerous goods (GB 6944-2012)

List of dangerous goods (GB 12268-2012)

Catalogue of hazardous chemicals (2015 Edition)



Regulations on the administration of road transport of dangerous goods (2010)

General rules for storage of common hazardous chemicals (GB 15603-1995)

Safety code for classification, warning labels and warning instructions of chemicals gas under pressure GB 20580-2006

Section 16. Other Information

Modification Description: it shall be revised and updated every three years. In case of special and major changes, it shall be revised immediately.