

Section 1 - Product and Company Identification

Product Name: Sulfur Dioxide
Chemical Formula: SO₂
CAS Number: 007446-09-5
Other Designations: Sulfurous acid anhydride, sulfurous anhydride, sulfurous oxide.
General Use: Chemical feedstock, food preservative, fumigating pesticide.
Manufacturer: Calabrian Corporation
 5500 Hwy. 366
 Port Neches, Texas 77651

Telephone: 409-727-1471
Fax: 409-727-5803
Emergency Contact: CHEMTREC 800-424-9300

Section 2 - Hazards Identification

Emergency Overview

Target Organs: Respiratory system, eyes, skin
GHS Classification: Acute Toxicity, Inhalation (Category 3)
 Skin Corrosion/Irritation (Category 1)
 Eye Damage/Irritation (Category 1)

GHS Label Elements: Signal Word – Danger

Pictograms



Acute Toxicity



Corrosive



Irritant



Compressed Gas

Hazard Statements: H331 – Toxic if inhaled
 H314 – Causes severe skin burns and eye damage

Precautionary Statements: P261 - Avoid breathing dust/fumes/gas/mist/vapors/spray.
 P264 - Wash thoroughly after handling.
 P271 - Use only outdoors or well-ventilated area.
 P280 - Wear protective gloves/protective clothing/eye protection/face protection.
 P284 - Wear respiratory protection.
 P304 + P340 – If Inhaled: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
 P301 + P330 – If Swallowed: Rinse mouth. Do not induce vomiting.
 P303 + P361 + P353 – If on Skin (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.
 P363 – Wash contaminated clothing before reuse.
 P305 + P351 + P338 – If In Eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

Other Hazards: Sulfur dioxide is a liquid under pressure.

HMIS Classification: Health Hazard 3
Flammability 0
Physical 0

NFPA Rating: Health Hazard 3
Fire 0
Reactivity 0

Section 3 - Composition / Information on Ingredients

Composition	CAS Number	% wt or vol
Sulfur Dioxide	007446-09-5	100 (wt.)
Ingredient		
Sulfur	007704-34-9	50 (wt.)
Oxygen	007782-44-7	50 (wt.)

Section 4 - First Aid Measures

First Aid General Information:

Remove victim to uncontaminated area wearing self contained breathing apparatus. Keep victim warm and rested. Seek medical attention. Apply artificial respiration if breathing stopped.

First Aid Inhalation:

Remove from exposure to fresh air. Seek medical attention in severe cases or if recovery is not rapid.

First Aid Skin / Eye:

May cause severe chemical burns to skin and eye. Suitable first aid treatment should be immediately available. Remove contaminated clothing. Drench affected area with water for at least 15 minutes. Immediately flush eyes thoroughly with water for at least 15 minutes. Seek medical attention.

First Aid Ingestion:

Ingestion is not likely to occur.

Seek appropriate medical attention and provide this SDS to attending doctor

Note to physician: Exposure may aggravate acute or chronic asthma, emphysema and bronchitis.

Section 5 - Fire-Fighting Measures

Flash Point: Not combustible.
Flash Point Method: Not Applicable.
Burning Rate: Not Applicable.
Auto Ignition Temperature: Not Applicable.
LEL: Not Applicable.
UEL: Not Applicable.
Flammability Classification: Not Flammable.
Extinguishing Media: Use extinguishing agent appropriate for surrounding fire conditions.
Unusual Fire or Explosion Hazards: None indicated.
Hazardous Combustion Products: May release hazardous gas.

Fire-Fighting Instructions: Do not release runoff from fire control methods to sewers or waterways.

Fire-Fighting Equipment: Because fire may produce toxic thermal decomposition products, wear a self-contained breathing apparatus (SCBA) with a full face piece operated in pressure-demand or positive-pressure mode.

Section 6 - Accidental Release Measures

Spill / Leak Procedures: Wear appropriate PPE - See Section 8.

Small Spills / Leaks: Spills can be neutralized with an alkaline material such as caustic soda. Leaks may be located by spraying the area with ammonium hydroxide solution which forms a white fume in the presence of sulfur dioxide.

Large Spills / Leaks: Large spills should be handled according to a predetermined plan. Reduce vapor with fog or fine water spray.

Containment: For large spills, dike far ahead of contaminated runoff for later disposal.

Section 7 - Handling and Storage

Handling Precautions: Avoid contact with product.

Storage Requirements: Avoid heat or moisture. Store in properly designed pressure vessels, away from heat and protected from physical damage. Segregate from combustible materials.

Section 8 - Exposure Controls / Personal Protection:

Component: Sulfur Dioxide **CAS Number:** 007446-09-5

ACGIH (TLV) **STEL:** 0.25 ppm, 15 minutes

OSHA (PEL) **TWA:** 5 ppm, 8 hours
TWA: 13 mg/m³, 8 hours

NIOSH (REL) **TWA:** 2 ppm, 10 hours
TWA: 5 mg/m³, 10 hours
STEL: 5 ppm, 15 minutes
STEL: 13 mg/m³, 15 minutes

Other Limit **IDLH:** 100 ppm

TWA – Time Weighted Average based on 8 hour exposure days and a 40 hour week.

STEL – Short Time Exposure Limit

IDLH - Immediately Dangerous to Life or Health

PEL – Permissible Exposure Limit

REL – Recommended Exposure Limit

TLV – Threshold Limit Value

ACGIH – American Conference of Governmental Industrial Hygienists

Engineering Controls: Provide general or local exhaust ventilation systems to maintain airborne concentrations below safe exposure limits as stated above. Local exhaust ventilation is preferred because it prevents contaminant dispersion into the work area by controlling it at the source.

- Respiratory Protection:** Follow OSHA respirator regulations (29 CFR 1910.134) and, if necessary, wear a MSHA/NIOSH-approved respirator. Select respirator based on its suitability to provide adequate worker protection for given working conditions, level of airborne contamination, and presence of sufficient oxygen. For emergency or non-routine operations (cleaning spills, reactor vessels, or storage tanks), wear an SCBA. Warning! Air-purifying respirators do not protect workers in oxygen-deficient atmospheres.
- Protective Clothing / Equipment:** Wear protective gloves, boots, and clothing to prevent prolonged or repeated skin contact. Wear protective eyeglasses or goggles, per OSHA eye and face protection regulations (29 CFR 1910.133).
- Safety Stations:** Make emergency eyewash stations, showers, and washing facilities available in the work area.
- Contaminated Equipment:** Separate contaminated work clothes from street clothes. Remove this material from shoes and clean personal protective equipment.
- Comments:** Do not eat, drink, or smoke in work areas. Practice good personal hygiene after using this material, especially before food or beverage consumption.

Section 9 - Physical and Chemical Properties

Physical State:	Liquid or gas	Water Solubility:	11g/100g H ₂ O
Appearance:	Colorless	Other Solubility:	NA
Odor Threshold:	0.5 ppm; pungent.	Boiling Point:	-10 C; 14 F.
Vapor Pressure:	2475 mm HG @ 20 C.	Freezing Point:	-75.5 C; -104 F.
Vapor Density (Air=1):	2.26 @ 20 C.	% Volatile:	NA
Formula Weight:	64.07	Evaporation Rate:	Rapid.
Density:	NA	pH:	Acidic.
Specific Gravity (H₂O=1):	1.36 @ 25 C.		

Section 10 - Stability & Reactivity

- Stability:** Stable under normal conditions.
- Polymerization:** Hazardous polymerization will not occur.
- Chemical Incompatibilities:** Contact with powdered potassium, sodium metal oxidizing agents produce violent reactions. Reacts with water and steam to form corrosive sulfurous acid. Reacts with chlorates to form unstable chlorine dioxide.
- Conditions to Avoid:** Avoid excessive heat, or open flame.
- Hazardous Decomposition Products:** May release hazardous gas.
- Stability:** Stable under normal conditions.
- Polymerization:** Hazardous polymerization will not occur.

Chemical Incompatibilities: In the presence of water, or acid, Sodium Metabisulfite (and solutions) may release toxic and hazardous fumes of sulfur oxides, including sulfur dioxide. Acute poisoning from sulfur dioxide is rare because the gas is easily detected. It is so irritating that contact cannot be tolerated. Symptoms include coughing, hoarseness, sneezing, tearing, and breathing difficulty. However, workers who cannot escape high accidental exposure may suffer severe pulmonary damage which can be fatal. Contact with powdered potassium, sodium metals, alkali, and oxidizing agents produce violent reactions. Reacts with water and steam to form corrosive sulfurous acid. Reacts with chlorates to form unstable chlorine dioxide.

Conditions to Avoid: Avoid excessive heat, open flame, and moisture.

Hazardous Decomposition: May release hazardous sulfur dioxide gas.

Section 11 - Toxicological Information

Eye Effects (rabbit):	Mild (6 ppm/4H/32D)	Acute Inhalation Effects (rat):	LC ₅₀ = 2520 ppm (1H)
Skin Effects:	Not available.	Acute Oral Effects:	Not available.
Carcinogenicity:	IARC, NTP, and OSHA do not list Sulfur Dioxide as a carcinogen.		
Chronic Effects:	Prolonged or repeated exposure may cause inflammation of the lining of the nose, dry throat and cough. Respiratory tract symptoms have been observed similar to changes observed in human chronic bronchitis.		

Section 12 - Ecological Information

Ecotoxicity:	Sulfur Dioxide is a poisonous gas commonly used as a fumigant pesticide. Concentrations above 1 ppm are believed to be injurious to plant foliage.
Environmental Transport:	Airborne gas.
Environmental Degradation:	Rapid evaporation.
Soil Absorption/Mobility:	Slight.

Section 13 - Disposal Considerations

Disposal: Waste determinations typically consider Sodium Metabisulfite contaminated materials to be non-hazardous.

Disposal Regulatory Requirements: Follow applicable Federal, state and local regulations.

Container Cleaning and Disposal: Follow applicable Federal, state and local regulations.

Section 14 - Transport Information

Shipping Name:	Sulfur Dioxide
Shipping Symbols:	Poison Gas
Hazard Class:	2.3
Subsidiary Hazard:	NA
ID No.:	UN 1079
Packing Group:	NA
Label:	Poison Gas
Special Provisions:	This material is poisonous by inhalation and has been assigned Special Provision #3 in 49 CFR 172.101.

Section 15 - Regulatory Information

EPA Regulations:

RCRA Hazardous Waste Classification (40 CFR 261):	Characteristically corrosive
RCRA Hazardous Waste Number (40 CFR 261):	D002.
CERCLA Hazardous Substance (40 CFR 302.4):	Not listed.
CERCLA Reportable Quantity (RQ):	NA
SARA Title III:	Section 302/304/311/312 Extremely Hazardous Substance: sulfur dioxide, 500 TPQ
	Section 302/304 Emergency Planning and Notification: sulfur dioxide, 500 RQ
Section 313 Toxic Chemical:	Not listed.

FIFRA: Regulated when used as a pesticide.

OSHA Regulations:

Air Contaminant (29 CFR 1910.1000):	Listed without ceiling or skin designation.
OSHA Specifically Regulated Substance:	List of Highly Hazardous Chemicals TQ=1000 lb.

Other Regulations:

FDA:	Regulated when used as a food preservative.
Proposition 65 (California)	Listed as a reproductive toxicant.

Canada:

WHMIS	Class: D1A – Causing immediate and serious toxic effects
CEPA	Listed in Canadian Environmental Protection Administration Toxic Substance List.
NPRI	Listed in Canadian National Pollutant Release Inventory

Section 16 - Other Information

This product is NSF certified to NSF/ANSI Standard 60 and is subject to a maximum use limit (MUL) of 10 mg/L for potable water dechlorination applications.

Previous SDS issue date: January, 2015
Current SDS issue date: March, 2015
Reason for current revision: Additional information in Section 8.

The information herein is believed to be reliable. However, no warranty, expressed or implied, is made as to its accuracy or completeness and none is made as to the fitness of this material for any purpose. The manufacturer shall not be liable for damages to person or property resulting from its use. Nothing herein shall be construed as a recommendation for use in violation of any patent.