



CALABRIAN CORPORATION

SULFUR DIOXIDE

FEB 26 2002

### Section 1 - Chemical Product and Company Identification

**Product/Chemical Name:** Sulfur Dioxide  
**Chemical Formula:** SO<sub>2</sub>  
**CAS Number:** 007446-09-5  
**Other Designations:** Sulfurous acid anhydride, sulfurous anhydride, sulfurous oxide.  
**General Use:** Chemical feedstock, food preservative, fumigating pesticide.  
**Manufacturer:** Calabrian Chemical Corporation  
 5500 Hwy. 366  
 Port Neches, Texas 77651  
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**CHEMTREC Emergency No. 800 / 424-9300**

### Section 2 - Composition / Information on Ingredients

Composition	TWA	STEL	IDLH	CAS Number	% wt or vol
Sulfur Dioxide	2 ppm 5 mg/m <sup>3</sup>	5 ppm 10 mg/m <sup>3</sup>	100 ppm	007446-09-5	100 %
<b>Ingredient Name</b>					
Sulfur	*	*	*	007704-34-9	50 %
Oxygen	*	*	*	007782-44-7	50 %

\* none established.

### Section 3 - Hazards Identification

#### \*\*\*\*\* Emergency Overview \*\*\*\*\*

**Warning Statement:** Warning! Harmful if inhaled.  
**Hazard Rating:** Health = 3, Fire = 0, Reactivity = 0, PPE - Sec. 8  
**Primary Entry Routes:** Inhalation  
**Target Organs:** Respiratory system, eyes, skin  
**Acute Effects:** 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.  
**Inhalation:** Irritant  
**Eye:** Irritant  
**Skin:** Irritant  
**Ingestion:** Not likely to occur  
**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.  
**Medical Conditions Aggravated by Long-Term Exposure:** None indicated.

### Section 4 - First Aid Measures

Exposure Route	Symptom	Treatment
Inhalation:	Concentrations above 0.3 ppm can be detected by humans, 5-10 ppm cause irritation of nose and throat. Higher concentrations cause irritant cough.	Remove from exposure to fresh air. Seek medical attention in severe cases or if recovery is not rapid.



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<u>Route</u>	<u>Symptom</u>	<u>Treatment</u>
<b>Eye Contact:</b> Concentrations of 20 ppm	Burning, scratching sensation. attention irritates the eyes. Liquid causes corneal burns.	Irrigate with water until no evidence of chemical remains. Obtain medical
<b>Skin Contact:</b>	Concentrations of 10,000 ppm is an irritant to moist areas of the skin within a few minutes of exposure. Contact with liquid causes burns (frostbite).	Wash with soap and drench with water. Remove contaminated clothing and before reuse.
<b>Ingestion:</b>	Liquid burns mouth, and gastric tract. Ingestion is not likely to occur.	Wash mouth and drink water. Do not induce vomiting.

*After first aid, get appropriate medical attention.*

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

**Special Precautions/Procedures:** None indicated.

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### Section 5 - Fire-Fighting Measures

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<b>Flash Point:</b>	Not combustible.
<b>Flash Point Method:</b>	Not Applicable.
<b>Burning Rate:</b>	Not Applicable.
<b>Autoignition Temperature:</b>	Not Applicable.
<b>LEL:</b>	Not Applicable.
<b>UEL:</b>	Not Applicable.
<b>Flammability Classification:</b>	Not Flammable.
<b>Extinguishing Media:</b>	Use extinguishing agent appropriate for surrounding fire conditions.
<b>Unusual Fire or Explosion Hazards:</b>	None indicated.
<b>Hazardous Combustion Products:</b>	May release hazardous gas.
<b>Fire-Fighting Instructions:</b>	Do not release runoff from fire control methods to sewers or waterways.
<b>Fire-Fighting Equipment:</b>	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.

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### Section 6 - Accidental Release Measures

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<b>Spill / Leak Procedures:</b>	Wear appropriate PPE - See Section 8.
<b>Small Spills / Leaks:</b>	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.
<b>Large Spills / Leaks:</b>	Large spills should be handled according to a predetermined plan.
<b>Containment:</b>	For large spills, dike far ahead of contaminated runoff for later disposal.

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### Section 7 - Handling and Storage

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<b>Handling Precautions:</b>	Avoid contact with product.
<b>Storage Requirements:</b>	Avoid heat or moisture. Store in properly designed pressure vessels, away from heat and protected from physical damage. Segregate from combustible materials.


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**SULFUR DIOXIDE**

### Section 8 - Exposure Controls / Personal Protection

**Ventilation:** Provide general or local exhaust ventilation systems to maintain airborne concentrations below OSHA limits (Sec. 2). 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 nonroutine 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

<b>Physical State:</b>	Liquid or gas	<b>Water Solubility:</b>	11g/100g H <sub>2</sub> O
<b>Appearance:</b>	Colorless	<b>Other Solubilities:</b>	NA
<b>Odor Threshold:</b>	0.5 ppm; pungent.	<b>Boiling Point:</b>	-10 C; 14 F.
<b>Vapor Pressure:</b>	2475 mm HG @ 20 C.	<b>Freezing Point:</b>	-75.5 C; -104 F.
<b>Vapor Density (Air=1):</b>	2.26 @ 20 C.	<b>% Volatile:</b>	NA
<b>Formula Weight:</b>	64.07	<b>Evaporation Rate:</b>	Rapid.
<b>Density:</b>	NA	<b>pH:</b>	Acidic.
<b>Specific Gravity (H<sub>2</sub>O=1):</b>	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 metals, alkali, and oxidizing agents produce violent reactions. Reacts with water and steam to form corrosive sulfuric 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.

### Section 11 - Toxicological Information

**Eye Effects (rabbit):** Mild (6 ppm/4H/32D).....

**Acute Inhalation Effects (rat):** LC<sub>50</sub> = 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.


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**SULFUR DIOXIDE**

**Environmental Degradation:** Rapid evaporation.  
**Soil Absorption/Mobility:** Slight.

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### Section 13 - Disposal Considerations

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**Disposal:** Absorbed sulfur dioxide solutions may be oxidized to inert sulfate salts for disposal.  
**Disposal Regulatory Requirements:** Follow applicable Federal, state and local regulations.  
**Container Cleaning and Disposal:** Follow applicable Federal, state and local regulations.

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### Section 14 - Transport Information

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#### DOT Transportation Data (49 CFR 172.101):

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

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### Section 15 - Regulatory Information

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#### 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 Extremely Hazardous Substance; RQ=1 lb.

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.

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### Section 16 - Other Information

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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.