

MATERIAL SAFETY DATA SHEET

SULPHUROUS ACID

PRODUCT CODE NUMBER(S): 8840-6

PRODUCT IDENTIFICATION

Chemical Name and Synonyms: Sulphurous acid; Sulphur dioxide solution**Chemical Family:** Inorganic acid**Chemical Formula:** SO₂ in H₂O**Product Use:** Laboratory reagent**Manufacturer's Name and Address:**Caledon Laboratories Ltd.
40 Armstrong Avenue
Georgetown, Ontario L7G 4R9**Telephone No:** (905) 877-0101**Fax No:** (905) 877-6666**Emergency Telephone No:** CANUTEC (613) 996-6666

HAZARDOUS INGREDIENTS OF MATERIALS

Ingredients	%	TLV Units	CAS No.
Sulphur dioxide	~6	2 ppm	7782-99-2

PHYSICAL DATA

Physical State: Liquid**Odour and Appearance:** Clear, almost colourless, pungent odour of sulphur dioxide**Odour Threshold (ppm):** 3-5 ppm (detection); poor warning properties; detection levels above TLV.**Vapour Pressure (mm Hg):** 49.1 (SO₂)**Vapour Density (Air = 1):** 2.3**Evaporation Rate:** Not available**Boiling Point (°C):** Not available**Freezing Point (°C):** Not available**pH:** Not available**Specific Gravity:** 1.03**Coefficient of Water/Oil distribution:** Not available

SHIPPING DESCRIPTION

UN: 1833**T.D.G. Class:** 8**Pkg. Group:** II

REACTIVITY DATA

Chemical Stability: Unstable; readily decomposes, releasing sulphur dioxide. Gradually oxidizes in air into sulphur acid.**Incompatibility with other substances:** Incompatible with oxidizing agents, alkalis, easily reducible compounds. Sulphur dioxide reacts violently with peroxides, chromates, bichromates, permanganates, oxygen difluoride. Reacts with chloride to form chlorine, which can become explosive at elevated temperatures. Corrodes most metals, releasing explosive/flammable hydrogen gas. May attack many plastics, rubber, coatings.**Reactivity:** Avoid high temperatures, all incompatible materials, generation of mist.**Hazardous Decomposition Products:** SO_x

FIRE AND EXPLOSION DATA

Flammability: Not combustible. Reacts with most metals to release highly flammable/explosive hydrogen gas. Containers may rupture if exposed to heat.**Extinguishing Media:** Use appropriate media to extinguish the surrounding supporting fire. Use water to cool containers, absorb heat, and disperse vapours, dilute chemical. Fight fire from upwind, from a safe distance. Firefighters must wear specialized protective clothing (full body encapsulating chemical resistant suit) and positive-pressure full face-piece self-contained breathing apparatus. Closed containers may rupture violently during fire; withdraw immediately in case of rising sound from vent or discoloration of container.**Flash Point (Method Used):** Not applicable**Autoignition Temperature:** Not applicable**Upper Flammable Limit (% by volume):** Not applicable**Lower Flammable Limit (% by volume):** Not applicable**Hazardous Combustion Products:** SO_x, acid vapours, flammable/explosive hydrogen gas.**Sensitivity to Impact:** None identified**Sensitivity to Static discharge:** None identified

TOXICOLOGICAL PROPERTIES AND HEALTH DATA

Toxicological Data:**LD₅₀:** Not available**LC₅₀:** (rat) 2520ppm/1h**TC_{Lo}:** (human) 1000 ppm/10 min**Effects of Acute Exposure to Product:****Inhaled:** Corrosive, toxic. Irritation of the respiratory tract. Effect may be noted at concentrations as low as 5 ppm. May cause increased pulmonary resistance, cough, shortness of breath. Severe overexposure can cause severe damage to lungs, pulmonary edema respiratory collapse, and death. Symptoms (shortness of breath, frothy sputum, cyanosis) may be delayed until hours or days after exposure.**In contact with skin:** Corrosive. May cause pain and severe burns to the skin. Severity of injury depends on the concentration and duration of exposure. Repeated exposure to dilute solutions may cause irritation, redness, pain and drying and cracking of the skin.**In contact with eyes:** Corrosive. Severity of injury depends on the concentration and duration of exposure. Can cause severe irritation, swelling, pain, burns to eye tissue, possible permanent damage to vision.**Ingested:** Burning and pain in the mouth, throat and abdomen. Vomiting, diarrhea and perforation of the esophagus

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and stomach lining may occur. Aspiration may occur during ingestion or vomiting, and can cause serious lung damage, pulmonary edema, and death.

Effects of Chronic Exposure to Product:

Chronic skin exposure to low concentrations can cause dermatitis. Chronic exposure can cause damage to tissue of eyes, mucous membranes, respiratory tract.

Carcinogenicity: No human or animal information available.

Teratogenicity: No human information available. Some effects in animal testing

Reproductive Effects: No human information available. Some effects in animal testing

Mutagenicity: Insufficient information available, some positive results

Synergistic Products: None known

PREVENTIVE MEASURES

Engineering Controls: Corrosion-resistant exhaust ventilation, separate from other ventilation systems.

Respiratory Protection: Dust/mist mask. Use only in a chemical fumehood. Up to 15 mg/m³: NIOSH/MSHA approved full face-piece chemical cartridge respirator with acid gas cartridges and high-efficiency particulate filter. For higher or unknown concentrations, as in fire or spill conditions, full face-piece supplied-air respirator with auxiliary positive-pressure self-contained breathing apparatus or full face-piece, positive-pressure self-contained breathing apparatus.

Eye Protection: Chemical goggles and/or face shield

Skin Protection: Butyl or natural rubber gloves. Other impervious clothing, apron, sleeves, coverall, boots sufficient to prevent contact.

Other Personal Protective Equipment: Safety showers and eye wash fountains in storage and handling area.

Leak and Spill Procedure: Evacuate area. Eliminate all ignition sources. Cleanup crew must be thoroughly trained in the hazards of this product and its safe use, and must wear protective respiratory equipment and impervious clothing sufficient to prevent inhalation of mists, fumes or vapours, and contact. Stop the discharge if possible and contain by constructing barriers. Keep from entering sewers or waterways. Absorb on sand or vermiculite and place in closed containers for disposal, reclamation or neutralization. Contaminated absorbent may pose the same hazards as the product; treat with caution. After thorough cleanup, ventilate area and wash site with copious amounts of running water.

Waste Disposal: Follow all federal, provincial, and local regulations for disposal.

Handling Procedures and Equipment: CORROSIVE, TOXIC. Persons working with this product must be thoroughly trained in its hazards and its safe use, and must wear appropriate protective equipment and clothing. When diluting, always add acid to water, slowly, while stirring carefully. Use the smallest amount possible for the purpose in a designated area with sufficient ventilation. Avoid all contact with liquid or vapours. Keep work area clean and free of any combustible or incompatible materials. Keep away from all sources of heat and ignition. Caution: empty containers may contain hazardous residues; treat with caution.

Storage Requirements: Store in suitable, labelled containers, in a dry, well-ventilated area out of direct sunlight. Store away from incompatible and combustible materials and all ignition sources. Storage area should be constructed of cor-

rosion-resistant materials. Store at temperatures above freezing. Keep tightly closed. Protect from damage, and inspect frequently for signs of damage or leaks.

FIRST AID MEASURES**Specific Measures:**

Eyes: Immediately flush eyes with gently running water for at least fifteen (15) minutes, holding eyelids open while flushing. Take care not to flush contaminated water into unaffected eye. Wear gloves to prevent contact during first aid procedures. Get medical attention immediately.

Skin: Remove contaminated clothing (including shoes, watches, belts, and rings) and flush the exposed area with running water for at least fifteen (15) minutes. Wear gloves to prevent contact. Get medical attention.

Inhalation: IMMEDIATELY remove to fresh air (caution must be used by rescuers to avoid exposure to the contaminating fumes). Give oxygen for breathing difficulty. If breathing has STOPPED give artificial respiration and get medical attention immediately. Stay with casualty until medical help arrives. If severe exposure is suspected hospitalization and observation for 72 hours for delayed onset of pulmonary edema is advised.

Ingestion: DO NOT INDUCE VOMITING. If casualty is alert and not convulsing, rinse mouth with water and give 1 to 2 glasses of water or milk to dilute material. Immediately obtain medical attention. If spontaneous vomiting occurs; have casualty lean forward with head down to avoid breathing in of vomitus, rinse mouth thoroughly and administer 1 to 2 glasses of water or milk.

REFERENCES USED

CCINFO disc: MSDS's, March 2007

Budavari: The Merck Index, 12th ed., 1997

Sax, Lewis: Hawley's Condensed Chemical Dictionary, 11th ed., 1987

Suppliers' Material Safety Data Sheets

ADDITIONAL INFORMATION

Date Issued: March 10, 1989

Revision: March 2010

MSDS: 8840-6

Proposed WHMIS Designation: E

Prepared by: Caledon Laboratories Ltd. (905) 877-0101
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