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Material Safety Data Sheet Sulfur trioxide MSDS

Section 1: Chemical Product and Company Identification

Product Name: Sulfur trioxide

Catalog Codes: SLS1135

CAS#: 7446-11-9

RTECS: WT4830000

TSCA: TSCA 8(b) inventory: Sulfur trioxide

CI#: Not available.

Synonym: Sulfuric anhydride

Chemical Name: Sulfur Trioxide

Chemical Formula: SO₃

Contact Information:

Sciencelab.com, Inc.

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Houston, Texas 77396

US Sales: **1-800-901-7247**

International Sales: **1-281-441-4400**

Order Online: ScienceLab.com

CHEMTREC (24HR Emergency Telephone), call:

1-800-424-9300

International CHEMTREC, call: 1-703-527-3887

For non-emergency assistance, call: 1-281-441-4400

Section 2: Composition and Information on Ingredients

Composition:

Name	CAS #	% by Weight
Sulfur trioxide	7446-11-9	100

Toxicological Data on Ingredients: Sulfur trioxide LD50: Not available. LC50: Not available.

Section 3: Hazards Identification

Potential Acute Health Effects:

Very hazardous in case of skin contact (corrosive, irritant, permeator), of eye contact (irritant, corrosive), of ingestion, of inhalation. Liquid or spray mist may produce tissue damage particularly on mucous membranes of eyes, mouth and respiratory tract. Skin contact may produce burns. Inhalation of the spray mist may produce severe irritation of respiratory tract, characterized by coughing, choking, or shortness of breath. Severe over-exposure can result in death. Inflammation of the eye is characterized by redness, watering, and itching. Skin inflammation is characterized by itching, scaling, reddening, or, occasionally, blistering.

Potential Chronic Health Effects:

CARCINOGENIC EFFECTS: Classified 1 (Proven for human.) by IARC. **MUTAGENIC EFFECTS:** Not available.

TERATOGENIC EFFECTS: Not available. **DEVELOPMENTAL TOXICITY:** Not available. The substance may be toxic to mucous membranes, skin, eyes. Repeated or prolonged exposure to the substance can produce target organs damage.

Repeated or prolonged contact with spray mist may produce chronic eye irritation and severe skin irritation. Repeated or prolonged exposure to spray mist may produce respiratory tract irritation leading to frequent attacks of bronchial infection.

Repeated exposure to a highly toxic material may produce general deterioration of health by an accumulation in one or many human organs.

Section 4: First Aid Measures

Eye Contact:

Check for and remove any contact lenses. In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Get medical attention immediately.

Skin Contact:

In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Cover the irritated skin with an emollient. Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention immediately.

Serious Skin Contact:

Wash with a disinfectant soap and cover the contaminated skin with an anti-bacterial cream. Seek immediate medical attention.

Inhalation:

If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention immediately.

Serious Inhalation:

Evacuate the victim to a safe area as soon as possible. Loosen tight clothing such as a collar, tie, belt or waistband. If breathing is difficult, administer oxygen. If the victim is not breathing, perform mouth-to-mouth resuscitation. **WARNING:** It may be hazardous to the person providing aid to give mouth-to-mouth resuscitation when the inhaled material is toxic, infectious or corrosive. Seek immediate medical attention.

Ingestion:

If swallowed, do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention immediately.

Serious Ingestion: Not available.

Section 5: Fire and Explosion Data

Flammability of the Product: Non-flammable.

Auto-Ignition Temperature: Not applicable.

Flash Points: Not applicable.

Flammable Limits: Not applicable.

Products of Combustion: Not available.

Fire Hazards in Presence of Various Substances: Not applicable.

Explosion Hazards in Presence of Various Substances:

Risks of explosion of the product in presence of mechanical impact: Not available. Risks of explosion of the product in presence of static discharge: Not available.

Fire Fighting Media and Instructions: Not applicable.

Special Remarks on Fire Hazards:

Phosphorous: Ignition. Metal Oxides (Oxides of Pb and Ba): Incandescent reaction.

Special Remarks on Explosion Hazards:

Formamide, iodine and pyridine: Possible explosion. Dioxygen difluoride: Violent reaction or explosion.

Section 6: Accidental Release Measures

Small Spill: Absorb with an inert material and put the spilled material in an appropriate waste disposal.

Large Spill:

Corrosive liquid. Poisonous liquid. Stop leak if without risk. If the product is in its solid form: Use a shovel to put the material into a convenient waste disposal container. If the product is in its liquid form: Absorb with DRY earth, sand or other non-combustible material. Do not get water inside container. Absorb with an inert material and put the spilled material in an appropriate waste disposal. Do not touch spilled material. Use water spray curtain to divert vapor drift. Use water spray to reduce vapors. Prevent entry into sewers, basements or confined areas; dike if needed. Call for assistance on disposal.

Section 7: Handling and Storage

Precautions:

Keep locked up.. Keep container dry. Keep away from heat. Keep away from sources of ignition. Keep away from direct sunlight or strong incandescent light. Do not ingest. Do not breathe gas/fumes/ vapor/spray. Never add water to this product. Avoid shock and friction. In case of insufficient ventilation, wear suitable respiratory equipment. If ingested, seek medical advice immediately and show the container or the label. Avoid contact with skin and eyes. Keep away from incompatibles such as oxidizing agents, metals, alkalis, moisture.

Storage: Keep container tightly closed. Keep container in a cool, well-ventilated area. Moisture sensitive.

Section 8: Exposure Controls/Personal Protection

Engineering Controls:

Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapors below their respective threshold limit value. Ensure that eyewash stations and safety showers are proximal to the work-station location.

Personal Protection:

Face shield. Full suit. Vapor respirator. Be sure to use an approved/certified respirator or equivalent. Gloves. Boots.

Personal Protection in Case of a Large Spill:

Splash goggles. Full suit. Vapor respirator. Boots. Gloves. A self contained breathing apparatus should be used to avoid inhalation of the product. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.

Exposure Limits: Not available.

Section 9: Physical and Chemical Properties

Physical state and appearance: Liquid. (Fuming oily liquid.)

Odor: Not available.

Taste: Not available.

Molecular Weight: 80.06 g/mole

Color: Clear Colorless.

pH (1% soln/water): Not available.

Boiling Point: 45°C (113°F)

Melting Point: 16.8°C (62.2°F)

Critical Temperature: 217.8°C (424°F)

Specific Gravity: 1.92 (Water = 1)

Vapor Pressure: Not available.

Vapor Density: 2.8 (Air = 1)

Volatility: Not available.

Odor Threshold: Not available.

Water/Oil Dist. Coeff.: Not available.

Ionicity (in Water): Not available.

Dispersion Properties: Not available.

Solubility: Reacts violently with water.

Section 10: Stability and Reactivity Data

Stability: The product is stable.

Instability Temperature: Not available.

Conditions of Instability: Moist air, water, incompatible materials

Incompatibility with various substances:

Reactive with oxidizing agents, metals, alkalis, moisture. The product may undergo hazardous decomposition, condensation or polymerization, it may react violently with water to emit toxic gases or it may become self-reactive under conditions of shock or increase in temperature or pressure.

Corrosivity: Non-corrosive in presence of glass.

Special Remarks on Reactivity:

Moisture sensitive Absorbs moisture from the air. On exposure to air, absorbs moisture rapidly, emitting dense white fumes. Reacts violently with water especially when water is added to the product (possible explosion). Also incompatible with the following: chlorates, lead oxide, nitrates, cyanides (e.g. potassium cyanide, sodium cyanide), sulfides (inorganic, e.g. ferric sulfide, lead sulfide, sodium sulfide), carbides, fulminates, picrates, Dimethyl sulfoxide: Highly exothermic reaction, Dioxane: Violent reaction, Dioxygen difluoride: Violent reaction or explosion, Diphenyl mercury: Violent reaction, Formamide, iodine and pyridine: Possible explosion, Metal Oxides (Oxides of Pb and Ba): Incandescent reaction, Nitryl chloride: Violent reaction at low temperatures, Phosphorous: Ignition

Special Remarks on Corrosivity: Absolute dry sulfur trioxide is not corrosive to metals

Polymerization: Will not occur.

Section 11: Toxicological Information

Routes of Entry: Absorbed through skin. Dermal contact. Eye contact. Inhalation. Ingestion.

Toxicity to Animals:

LD50: Not available. LC50: Not available.

Chronic Effects on Humans:

CARCINOGENIC EFFECTS: Classified 1 (Proven for human.) by IARC. May cause damage to the following organs: mucous membranes, skin, eyes.

Other Toxic Effects on Humans:

Very hazardous in case of skin contact (corrosive, irritant, permeator), of eye contact (corrosive), of ingestion, . Hazardous in case of inhalation (lung corrosive).

Special Remarks on Toxicity to Animals:

Lowest Published Lethal Dose: LCL [Guinea Pig]- Route: Inhalation; Dose 30 mg/m³/6H

Special Remarks on Chronic Effects on Humans: Not available.

Special Remarks on other Toxic Effects on Humans:

Acute Potential Health Effects: Skin: Causes severe skin irritation and burns. Eye: Causes severe eye irritation and burns. May cause irreversible eye injury. Ingestion: Harmful if swallowed. May cause permanent damage to the digestive tract. Causes gastrointestinal tract burns. Inhalation: May cause severe irritation of the respiratory tract and mucous membranes with sore throat, coughing, shortness of breath, chemical pneumonitis, and delayed lung edema. Causes chemical burns to the respiratory tract. Inhalation may be fatal as a result of spasm, inflammation, edema of the larynx and bronchi, chemical

pneumonitis, and pulmonary edema. Cause corrosive action on mucous membranes. May affect cardiovascular system (hypotension, depressed cardiac output, bradycardia), and liver (necrotic hepatic lesions). Chronic Potential Health Effects: Inhalation: Prolonged or repeated inhalation may cause chronic pulmonary obstructive disease, or chronic bronchitis.

Section 12: Ecological Information

Ecotoxicity: Not available.

BOD5 and COD: Not available.

Products of Biodegradation:

Possibly hazardous short term degradation products are not likely. However, long term degradation products may arise.

Toxicity of the Products of Biodegradation: The products of degradation are less toxic than the product itself.

Special Remarks on the Products of Biodegradation: Not available.

Section 13: Disposal Considerations

Waste Disposal:

Waste must be disposed of in accordance with federal, state and local environmental control regulations.

Section 14: Transport Information

DOT Classification:

Class 8: Corrosive material CLASS 6.1: Poisonous material.

Identification: : Sulfur trioxide, stabilized UNNA: 1829 PG: I

Special Provisions for Transport: Poison inhalation hazard zone B

Section 15: Other Regulatory Information

Federal and State Regulations:

Connecticut hazardous material survey.: Sulfur trioxide Illinois chemical safety act: Sulfur trioxide New York release reporting list: Sulfur trioxide Pennsylvania RTK: Sulfur trioxide Massachusetts RTK: Sulfur trioxide Massachusetts spill list: Sulfur trioxide New Jersey: Sulfur trioxide New Jersey spill list: Sulfur trioxide New Jersey toxic catastrophe prevention act: Sulfur trioxide Louisiana RTK reporting list: Sulfur trioxide TSCA 8(b) inventory: Sulfur trioxide SARA 302/304/311/312 extremely hazardous substances: Sulfur trioxide CERCLA: Hazardous substances.: Sulfur trioxide: 100 lbs. (45.36 kg)

Other Regulations:

OSHA: Hazardous by definition of Hazard Communication Standard (29 CFR 1910.1200). EINECS: This product is on the European Inventory of Existing Commercial Chemical Substances.

Other Classifications:

WHMIS (Canada):

CLASS D-2B: Material causing other toxic effects (TOXIC). CLASS E: Corrosive liquid. CLASS F: Dangerously reactive material.

DSCL (EEC):

HMIS (U.S.A.):

Health Hazard: 3

Fire Hazard: 0

Reactivity: 2

Personal Protection:

National Fire Protection Association (U.S.A.):

Health: 3

Flammability: 0

Reactivity: 2

Specific hazard:

Protective Equipment:

Gloves. Full suit. Vapor respirator. Be sure to use an approved/certified respirator or equivalent. Wear appropriate respirator when ventilation is inadequate. Face shield.

Section 16: Other Information

References: Not available.

Other Special Considerations: Not available.

Created: 10/09/2005 11:59 PM

Last Updated: 11/01/2010 12:00 PM

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