


SULFUR TRIOXIDE**ICSC: 1202****Date of Peer****Review:****October****2002**Sulphuric (acid) anhydride
Sulfuric oxide

CAS #	7446-11-9	SO ₃
RTECS #	WT4830000	Molecular mass: 80.1
UN #	1829	
EC #		

TYPES OF HAZARD / EXPOSURE	ACUTE HAZARDS / SYMPTOMS	PREVENTION	FIRST AID / FIRE FIGHTING
FIRE	Not combustible. Heating will cause rise in pressure with risk of bursting. Gives off irritating or toxic fumes (or gases) in a fire.	NO contact with base(s), combustibles, reducing agents, water.	NO hydrous agents. NO water. In case of fire in the surroundings: use appropriate extinguishing media.
EXPLOSION	Risk of fire and explosion on contact with base(s), combustible substances, reducing agents, water.		In case of fire: cool drums, etc., by spraying with water but avoid contact of the substance with water.
EXPOSURE		PREVENT GENERATION OF MISTS! AVOID ALL CONTACT!	IN ALL CASES CONSULT A DOCTOR!
Inhalation	Burning sensation. Cough. Laboured breathing. Sore throat. Wheezing. Shortness of breath.	Ventilation, local exhaust, or breathing protection.	Fresh air, rest. Half-upright position. Refer for medical attention.
Skin	Redness. Serious skin burns. Pain. Blisters.	Protective gloves. Protective clothing.	Remove contaminated clothes. Rinse skin with plenty of water or shower. Refer for medical attention.
Eyes	Redness. Pain. Blurred vision. Severe deep burns.	Face shield, or eye protection in combination with breathing protection.	First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then take to a doctor.
Ingestion	Abdominal pain. Burning sensation.	Do not eat, drink, or smoke during work.	Refer for medical attention. Rinse mouth.

	Nausea. Shock or collapse.		Do NOT induce vomiting. Give plenty of water to drink.
SPILLAGE DISPOSAL		PACKAGING & LABELLING	
Evacuate danger area! Consult an expert! Do NOT absorb in saw-dust or other combustible absorbents. Absorb remaining liquid in dry sand or inert absorbent and remove to safe place. Ventilation. NEVER direct water jet on liquid. Do NOT let this chemical enter the environment. Chemical protection suit including self-contained breathing apparatus.		Do not transport with food and feedstuffs. Airtight. EU Classification UN Classification UN Hazard Class: 8 UN Pack Group: I	
EMERGENCY RESPONSE		STORAGE	
Transport Emergency Card: TEC (R)-80GC1-I-X NFPA Code: H3; F0; R2;		Store only if stabilized. Separated from food and feedstuffs, incompatible materials. See Chemical Dangers. Dry. Store between 17°C and 25°C.	
<p>IPCS International Programme on Chemical Safety</p> 		<p>Prepared in the context of cooperation between the International Programme on Chemical Safety and the Commission of the European Communities © IPCS, CEC 1999</p> <p>SEE IMPORTANT INFORMATION ON BACK</p>	

SULFUR TRIOXIDE

ICSC: 1202

IMPORTANT DATA

PHYSICAL STATE; APPEARANCE:
FUMING HYGROSCOPIC COLOURLESS LIQUID OR COLOURLESS TO WHITE CRYSTALS

PHYSICAL DANGERS:
The vapour is heavier than air. See Notes.

CHEMICAL DANGERS:
The substance is a strong oxidant and reacts violently with combustible and reducing materials and organic compounds causing fire and explosion hazard. Reacts violently with water and moist air to produce sulfuric acid. The solution in water is a strong acid, it reacts violently with bases and is corrosive metals forming flammable/explosive gas (hydrogen - see ICSC0001).

OCCUPATIONAL EXPOSURE LIMITS:
TLV not established.

ROUTES OF EXPOSURE:
The substance can be absorbed into the body by inhalation of its vapour and by ingestion.

INHALATION RISK:
A harmful contamination of the air will be reached very quickly on evaporation of this substance at 20°C.

EFFECTS OF SHORT-TERM EXPOSURE:
The substance is corrosive to the eyes, the skin and the respiratory tract. Corrosive on ingestion.

EFFECTS OF LONG-TERM OR REPEATED EXPOSURE:
Lungs may be affected by repeated or prolonged exposure to an aerosol of this substance. Risk of tooth erosion upon repeated or prolonged exposure to an aerosol of this substance. Strong inorganic acid mists containing this substance are carcinogenic to humans.

PHYSICAL PROPERTIES

Boiling point: 45°C Melting point: see Notes Relative density (water = 1): 1.9 Solubility in water: reaction Vapour pressure, kPa at 25°C: see Notes Relative vapour density (air = 1): 2.8	Relative density of the vapour/air-mixture at 20°C (air = 1): 1.2-2
ENVIRONMENTAL DATA	
The substance is harmful to aquatic organisms.	
NOTES	
NEVER pour water into this substance; when dissolving or diluting always add it slowly to the water. When the alpha form melts it takes the gamma form, and vapor pressure rises dramatically with a hazard of explosion. Melting point is 62, 33 and 17°C for alpha, beta and gamma forms. Vapour pressure is 9.7, 45.9 and 57.7 kPa at 25°C for alpha, beta and gamma forms.	
ADDITIONAL INFORMATION	
LEGAL NOTICE Neither the CEC nor the IPCS nor any person acting on behalf of the CEC or the IPCS is responsible for the use which might be made of this information	
© IPCS, CEC 1999	