

SULFURIC ACID

0362

October 2000

CAS No: 7664-93-9
RTECS No: WS5600000
UN No: 1830
EC No: 016-020-00-8

Sulfuric acid 100%
Oil of vitriol
H₂SO₄
Molecular mass: 98.1

TYPES OF HAZARD/ EXPOSURE	ACUTE HAZARDS/SYMPTOMS	PREVENTION	FIRST AID/FIRE FIGHTING
FIRE	Not combustible. Many reactions may cause fire or explosion. Gives off irritating or toxic fumes (or gases) in a fire.	NO contact with flammable substances. NO contact with combustibles.	NO water. In case of fire in the surroundings: powder, AFFF, foam, carbon dioxide.
EXPLOSION	Risk of fire and explosion on contact with base(s), combustible substances, oxidants, reducing agents or water.		In case of fire: keep drums, etc., cool by spraying with water but NO direct contact with water.

EXPOSURE		PREVENT GENERATION OF MISTS! AVOID ALL CONTACT!	IN ALL CASES CONSULT A DOCTOR!
Inhalation	Corrosive. Burning sensation. Sore throat. Cough. Laboured breathing. Shortness of breath. Symptoms may be delayed (see Notes).	Ventilation, local exhaust, or breathing protection.	Fresh air, rest. Half-upright position. Artificial respiration if indicated. Refer for medical attention.
Skin	Corrosive. Redness. Pain. Blisters. Serious skin burns.	Protective gloves. Protective clothing.	Remove contaminated clothes. Rinse skin with plenty of water or shower. Refer for medical attention.
Eyes	Corrosive. Redness. Pain. 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	Corrosive. Abdominal pain. Burning sensation. Shock or collapse.	Do not eat, drink, or smoke during work.	Rinse mouth. Do NOT induce vomiting. Refer for medical attention.

SPILLAGE DISPOSAL	PACKAGING & LABELLING
Consult an expert! Evacuate danger area! Do NOT absorb in saw-dust or other combustible absorbents. (Extra personal protection: complete protective clothing including self-contained breathing apparatus). Do NOT let this chemical enter the environment.	C Symbol R: 35 S: (1/2-)26-30-45 Note: B UN Hazard Class: 8 UN Pack Group: II Unbreakable packaging; put breakable packaging into closed unbreakable container. Do not transport with food and feedstuffs.

EMERGENCY RESPONSE	STORAGE
Transport Emergency Card: TEC (R)-10B NFPA Code: H 3; F 0; R 2; W	Separated from combustible and reducing substances, strong oxidants, strong bases, food and feedstuffs, incompatible materials. See Chemical Dangers. May be stored in stainless steel containers. Store in an area having corrosion resistant concrete floor.

IMPORTANT DATA

Physical State; Appearance

COLOURLESS, OILY, HYGROSCOPIC LIQUID, WITH NO ODOUR.

Chemical dangers

The substance is a strong oxidant and reacts violently with combustible and reducing materials. The substance is a strong acid, it reacts violently with bases and is corrosive to most common metals forming a flammable/explosive gas (hydrogen - see ICSC 0001). Reacts violently with water and organic materials with evolution of heat (see Notes). Upon heating, irritating or toxic fumes (or gases) (sulfur oxides) are formed.

Occupational exposure limits

TLV: 1 mg/m³ (as TWA);
3 mg/m³ (as STEL) A2 sulfuric acid contained in strong inorganic acid mists (ACGIH 2000).
MAK: 1 mg/m³; inhalable fraction of aerosol (1999).

Routes of exposure

The substance can be absorbed into the body by inhalation of its aerosol and by ingestion.

Inhalation risk

Evaporation at 20°C is negligible; a harmful concentration of airborne particles can, however, be reached quickly on spraying.

Effects of short-term exposure

Corrosive. The substance is very corrosive to the eyes the skin and the respiratory tract. Corrosive on ingestion. Inhalation of an aerosol of this substance may cause lung oedema (see Notes).

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 (decomposes): 340°C

Melting point: 10°C

Relative density (water = 1): 1.8

Solubility in water: miscible

Vapour pressure, kPa at 146°C: 0.13

Relative vapour density (air = 1): 3.4

ENVIRONMENTAL DATA

The substance is harmful to aquatic organisms.

NOTES

The symptoms of lung oedema often do not become manifest until a few hours have passed and they are aggravated by physical effort. Rest and medical observation are therefore essential.

NEVER pour water into this substance; when dissolving or diluting always add it slowly to the water.

Other UN numbers: UN1831 Sulfuric acid, fuming, hazard class 8, subsidiary hazard 6.1, pack group I; UN1832 Sulfuric acid, spent, Hazard class 8, Pack group II.

ADDITIONAL INFORMATION

LEGAL NOTICE

Neither the EC nor the IPCS nor any person acting on behalf of the EC or the IPCS is responsible for the use which might be made of this information