

**COPPER(II) SULFATE, PENTAHYDRATE****1416**

October 2001

CAS No: 7758-99-8  
RTECS No: GL8900000  
EC No: 029-004-00-0Sulfuric acid, copper(2+) salt, pentahydrate  
CuSO<sub>4</sub>·5H<sub>2</sub>O  
Molecular mass: 249.7

TYPES OF HAZARD/ EXPOSURE	ACUTE HAZARDS/SYMPTOMS	PREVENTION	FIRST AID/FIRE FIGHTING
<b>FIRE</b>	Not combustible. Gives off irritating or toxic fumes (or gases) in a fire.		In case of fire in the surroundings: use appropriate extinguishing media.
<b>EXPLOSION</b>			

EXPOSURE		PREVENT DISPERSION OF DUST!	
<b>Inhalation</b>	Cough. Sore throat.	Local exhaust or breathing protection.	Fresh air, rest.
<b>Skin</b>	Redness. Pain.	Protective gloves.	Rinse skin with plenty of water or shower.
<b>Eyes</b>	Pain. Redness. Blurred vision.	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.
<b>Ingestion</b>	Abdominal pain. Burning sensation. Diarrhoea. Nausea. Vomiting. Shock or collapse.	Do not eat, drink, or smoke during work. Wash hands before eating.	Do NOT induce vomiting. Give plenty of water to drink. Refer for medical attention.

SPILLAGE DISPOSAL	PACKAGING & LABELLING
Sweep spilled substance into containers; if appropriate, moisten first to prevent dusting. Personal protection: P2 filter respirator for harmful particles. Do NOT let this chemical enter the environment.	Xn Symbol N Symbol R: 22-36/38-50/53 S: (2-)22-60-61

EMERGENCY RESPONSE	SAFE STORAGE
	Well closed.

### IMPORTANT DATA

**Physical State; Appearance**  
BLUE SOLID IN VARIOUS FORMS

**Chemical dangers**

The substance decomposes on heating producing toxic and corrosive fumes including sulfur oxides. The solution in water is a weak acid. Attacks many metals in the presence of water.

**Occupational exposure limits**

TLV: (as copper) 1 mg/m<sup>3</sup> as TWA; (ACGIH 2004).  
MAK: (as copper) (Inhalable fraction) 0.1 mg/m<sup>3</sup>; Peak limitation category: II(2); Pregnancy risk group: D; (DFG 2004).

**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 when dispersed, especially, if powdered.

**Effects of short-term exposure**

The substance is severely irritating to the eyes and the skin. The aerosol is irritating to the respiratory tract. Corrosive on ingestion. If ingested, the substance may cause effects on the blood, kidneys and liver, resulting in hemolytic anemia, kidney impairment and liver impairment.

**Effects of long-term or repeated exposure**

Lungs may be affected by repeated or prolonged exposure to the aerosol. The substance may have effects on the liver when ingested.

### PHYSICAL PROPERTIES

Melting point (decomposes): 110°C  
Density: 2.3 g/cm<sup>3</sup>

Solubility in water, g/100 ml at 0°C: 31.7

### ENVIRONMENTAL DATA

The substance is very toxic to aquatic organisms. Bioaccumulation of this chemical may occur along the food chain, for example in fish. It is strongly advised that this substance does not enter the environment.

### NOTES

The apparent melting point caused by loss of crystal water is given.  
Card has been partly updated in April 2005. See section Occupational Exposure Limits.

### ADDITIONAL INFORMATION

#### LEGAL NOTICE

Neither the EC nor the IPCS nor any person acting on behalf of the EC or the IPCS is responsible