



Titanium, Mineral & Chemicals

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MSDS (Material Safety Data Sheet)

COPPER SULFATE PENTAHYDRATE (CuSO₄ 5H₂O)

Section 1 : Product and Company Identification

Synonyms: COPPER SULFATE.

CAS No.: 7758-98-7

Molecular Weight: 249.68

Chemical Formula: CuSO₄ 5H₂O

HS Number : 2833-25-0000

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Section 2 : Composition/Information on Ingredients

Component : COPPER SULFATE PENTAHYDRATE

CAS number : 7758-98-7

HS Number : 2833-25-0000

Percentage : 98.0 %

Hazardous :

This compound is toxic by ingestion. It is a strong irritant. When heated to decomposition it emits toxic fumes of sulfur oxides. It can be absorbed through the skin(repeated application to the skin caused poisoning).

Section 3 : Hazards Identification

EMERGENCY OVERVIEW

CAUSES IRRITATION TO EYES

NFPA Ratings (Scale 0-4): HEALTH=0 FIRE=0 REACTIVITY=0

EC Classification (Assigned):

R 36/38,EC Classification may be inconsistent with independently-researched data.

Color : Blue

Physical Form: crystal powder

Odor: odorless

Major Health Hazards: respiratory irritation, eye irritation, mucous membrane irritation

POTENTIAL HEALTH EFFECTS:

INHALATION:

Immediately leave the contaminated area : take deep breaths of fresh air.

If symptoms(such as wheezing, coughing, shortness of breath, or burning in the mouth, throat or chest) develop. Call a physician and be prepared to transport the victim to a hospital.

SKIN CONTACT:

Immediately flood affected skin with water while removing and isolating all contaminated clothing. Gently wash all affected skin area thoroughly with soap and water If symptoms such as redness or irritation develop, Immediately Call a physician and be prepared to transport the victim to a hospital

EYE CONTACT:

First check the victim for contact lenses and remove if present. Flush victim's eyes with water or normal saline solution for 20 to 30 minutes while simultaneously calling a hospital or poison control center. Do not put any ointments ,oils, or medication in the victim's eyes without specific instruction from a physician. Immediately transport the victim after flushing eyes to a hospital even if no symptoms(such as redness or irritation)develop.

INGESTION:

Some heavy metals are very toxic poisons. Especially if their salt are very soluble in water.

. Immediately call a hospital or poison control center and locate activated charchal,egg whites,milk in case the medical advisor recommends administering one of them. Also locate ipecac syrup or a glass of salt water in case the medical advisor recommends inducing vomiting. Usually, this is not recommended outside of a physician care. If advice from a physician is not readily available and the victm is conscious and not convulsing, give the victim a glass of activated charcol

slurry in water or ,if this is not available, a glass of milk, or beaten egg whites and immediately transport victim to a hospital.

If the victim is convulsing or unconscious ,do not give anything by mouth, assure that the victim's airway is open and lay the victim on his/her side with the head lower than the body. Do not induce vomitin. Immediately transport the victim to a hospital.

CARCINOGEN STATUS:N

OSHA: N

NTP: N

IARC: N

Section 4 : First Aid Measures

Inhalation: Remove to fresh air.

Ingestion: If swallowed, give several glasses of water to drink. Vomiting may occur spontaneously, but DO NOT INDUCE! Never give anything by mouth to an unconscious person. Get medical attention.

Skin Contact: Wipe off excess material from skin then flush skin with plenty of water. Remove contaminated clothing and shoes.

Eye Contact: Immediately flush eyes with plenty of water for at least 15 minutes, lifting lower and upper eyelids occasionally.

NOTE TO PHYSICIAN: For inhalation, consider oxygen.

Section 5 : Fire Fighting Measures

Fire: Not considered to be a fire hazard. Will not burn

Explosion: Sealed containers may rupture when heated.

Fire Extinguishing Media: Use any means suitable for extinguishing surrounding fire. Water spray may be used to keep fire exposed containers cool.

Special Information: In the event of a fire, wear full protective clothing and NIOSH-approved self-contained breathing apparatus with full facepiece operated in the pressure demand or other positive pressure mode.. Sealed containers of this material may rupture at moderate temperatures (release of water vapor)..

Section 6 : Accidental Release Measures

Soil Release:Dig holding area such as lagoon, pond or pit for containment. Cover with plastic sheet or tarp to minimize spreading and protect from contact with water.

Water Release: just wash out

Occupational Release:Ventilate area of leak or spill. Keep unnecessary and unprotected people away from area of spill. Wear appropriate personal protective equipment as specified in Section 8.

Spills: Pick up and place in a suitable container for reclamation or disposal, using a method that does not generate dust.

Section 7 : Handling and Storage

Keep in a tightly closed container, stored in a cool, dry, ventilated area. Protect against physical damage; observe all warnings and precautions listed for the product.

Section 8 : Exposure Controls/Personal Protection

Airborne Exposure Limits: None established.

Ventilation System: A system of local and/or general exhaust is recommended to keep employee exposures as low as possible. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area. Please refer to the ACGIH document, *Industrial Ventilation, A Manual of Recommended Practices*, most recent edition, for details.

Personal Respirators (NIOSH Approved): For conditions of use where exposure to the dust or mist is apparent, a half-face dust/mist respirator may be worn. For emergencies or instances where the exposure levels are not known, use a full-face positive-pressure, air-supplied respirator. **WARNING:** Air-purifying respirators do not protect workers in oxygen-deficient atmospheres.

Skin Protection: Wear impervious protective clothing, including boots, gloves, lab coat, apron or coveralls.

Eye Protection: Use chemical safety goggles. Maintain eye wash fountain and quick-drench facilities in work area.

Clothing: Wear appropriate clothing.

Gloves: impervious gloves or none specified by manufacturer

Section 9 : Physical and Chemical Properties

Appearance: Blue powder

Odor: Odorless.

Color: Blue

Solubility: Soluble in water(1mg/ml).

Molecular Weight: 249.68

Molecular Formula: $\text{CuSO}_4 \cdot 5\text{H}_2\text{O}$

Specific Gravity: 2.284

pH: 5

Vapor Density (Air=1): No information found.

Vapor Pressure (mm Hg): No information found.

Evaporation Rate (BuAc=1): No information founded

Coefficient of Water/Oil Distribution: Not available

Section 10 : Stability and Reactivity

Stability: This material is sensitive to heat and moisture. It is stable indefinitely when kept dry.

Reactivity: Stable at normal temperatures and pressure

Conditions to Avoid: Stable at normal temperatures and pressure

Polymerization: Will not polymerize.

Hazardous Decomposition Products: Sulfur oxides

Hazardous Polymerization: Will not occur.

Section 11 : Toxicological Information

Irritation Data: ND

Toxicity Data: ND.

Local Effects: irritation eye

Tumorigenic Data: ND

Mutagenic Data: ND

Reproductive Effects Data: ND

Section 12 : Disposal Considerations

Whatever cannot be saved for recovery or recycling should be managed in an appropriate and approved waste disposal facility. Processing, use or contamination of this product may change the waste management options. State and local disposal regulations may differ from federal disposal regulations. Dispose of container and unused contents in accordance with federal, state and local requirements.

Section 13 : Transport Information

No hazard class in the world