



Registered Off. : 101-A, Deep Enclave, Pocket 'D', Ashok Vihar, Phase-III, Delhi-110 052 (India)  
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## FEHLING'S SOLUTION A

### 1. Product Identification

Synonyms: Cupric sulfate (for reducing sugars); Cupric Tartrate TS, Alkaline

CAS No.: Not applicable to mixtures.

Molecular Weight: Not applicable to mixtures.

Chemical Formula: Not applicable to mixtures.

Product Codes: 26023

### 2. Composition/Information on Ingredients

Ingredient	CAS No	Percent
Cupric Sulfate	7758-98-7	4.43%
Water	7732-18-5	95.57%

### 3. Hazards Identification

Potential Health Effects

Inhalation: Not expected to be a health hazard via inhalation, under normal conditions, but upon heating or misting the substance can cause irritation to the upper respiratory tract. Inhalation of mists of copper salts can cause ulceration of the nasal system.

Ingestion: Large oral doses may cause systemic copper poisoning which may include nausea, vomiting, diarrhea, headache, kidney and liver damage, convulsions, coma.

Skin Contact: Symptoms are not expected to be as severe as higher concentrated solutions, where symptoms may include irritation and redness.

Eye Contact: Splashes may cause irritation. Symptoms are not expected to be as severe as higher concentrated solutions, where symptoms may include conjunctivitis, ulceration, and clouding of the cornea.

Chronic Exposure: Prolonged or repeated skin exposure may cause dermatitis.

Aggravation of Pre-existing Conditions: Persons with pre-existing skin disorders, impaired liver, kidney, or pulmonary function, glucose 6-phosphate-dehydrogenase deficiency, or pre-existing Wilson's disease may be more susceptible to the effects of this material.

### 4. First Aid Measures

Inhalation: Remove to fresh air. Get medical attention for any breathing difficulty.

Ingestion: Induce vomiting immediately as directed by medical personnel. Never give anything by mouth to an unconscious person.

Skin Contact: Wash exposed area with soap and water. Get medical advice if irritation develops.

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

### 5. Fire Fighting Measures

Fire: Not considered to be a fire hazard.

Explosion: Not considered to be an explosion hazard.

Fire Extinguishing Media: Use any means suitable for extinguishing surrounding fire.

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Special Information: In the event of a fire, wear full protective clothing and NIOSH-approved self-contained breathing apparatus with full face piece operated in the pressure demand or other positive pressure mode.

#### 6. Accidental Release Measures

Ventilate area of leak or spill. Wear appropriate personal protective equipment as specified in Section 8. Contain and recover liquid when possible. Collect liquid in an appropriate container or absorb with an inert material (e. g., vermiculite, dry sand, earth), and place in a chemical waste container. Do not use combustible materials, such as saw dust.

#### 7. Handling and Storage

Keep in a tightly closed container, stored in a cool, dry, ventilated area. Protect against physical damage.

#### 8. Exposure Controls/Personal Protection

Airborne Exposure Limits:

-OSHA Permissible Exposure Limit (PEL):

1 mg/m<sup>3</sup> (TWA) for copper dusts & mists as Cu

-ACGIH Threshold Limit Value (TLV):

1 mg/m<sup>3</sup> (TWA) for copper dusts & mists as Cu

Ventilation System: A system of local and/or general exhaust is recommended to keep employee exposures below the Airborne Exposure Limits. 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.

Personal Respirators (NIOSH Approved): If the exposure limit is exceeded and engineering controls are not feasible, a half facepiece particulate respirator (NIOSH type N95 or better filters) may be worn for up to ten times the exposure limit or the maximum use concentration specified by the appropriate regulatory agency or respirator supplier, whichever is lowest. A full-face piece particulate respirator (NIOSH type N100 filters) may be worn up to 50 times the exposure limit, or the maximum use concentration specified by the appropriate regulatory agency, or respirator supplier, whichever is lowest. If oil particles (e.g. lubricants, cutting fluids, glycerine, etc.) are present, use a NIOSH type R or P filter. For emergencies or instances where the exposure levels are not known, use a full-facepiece positive-pressure, air-supplied respirator.

Skin Protection: Wear protective gloves and clean body-covering clothing.

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

#### 9. Physical and Chemical Properties

Appearance: Clear blue solution.

Odor: Odorless.

Solubility: Infinitely soluble.

Specific Gravity: ca. 1.04

pH: No information found.

% Volatiles by volume @ 21C (70F): No information found.

Boiling Point: ca. 100C (ca. 212F)

Melting Point: ca. 0C (ca. 32F)

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

Vapor Pressure (mm Hg): No information found.

Evaporation Rate (BuAc=1): No information found.

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#### 10. Stability and Reactivity

Stability: Stable under ordinary conditions of use and storage.

Hazardous Decomposition Products: At temperatures > 400C, decomposes to sulfur oxides and copper oxide.

Hazardous Polymerization: Will not occur.

Incompatibilities: Other metal solutions.

Conditions to Avoid: No information found.

#### 11. Toxicological Information

Anhydrous CuSO<sub>4</sub>: Oral rat LD<sub>50</sub>: 300 mg/kg. Investigated as a tumorigen, mutagen and reproductive effector.

-----\Cancer Lists\-----

---NTP Carcinogen---

Ingredient	Known	Anticipated	IARC Category
Cupric Sulfate (7758-98-7)	No	No	None
Water (7732-18-5)	No	No	None

#### 12. Ecological Information

Environmental Fate: No information found.

Environmental Toxicity: No information found.

#### 13. Disposal Considerations

Dispose of container and unused contents in accordance with federal, state and local requirements.

#### 14. Transport Information

Not Regulated..

#### 15. Regulatory Information

SARA 311/312: Acute: Yes Chronic: No Fire: No Pressure: No

Reactivity: No (Pure / Liquid)

#### 16. Other Information

Product Use:

Laboratory Reagent.