

MATERIAL SAFETY DATA SHEET

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MSDS No. 800-424-9300  
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Effective Date

| SECTION I         | NAME                                 | 24 HOUR EMERGENCY ASSISTANCE                              |
|-------------------|--------------------------------------|-----------------------------------------------------------|
| Product           | CUPRIC SULFATE, 5-HYDRATE            | CHEMTREC<br>800-424-9300<br>Day 716-226-6177              |
| Chemical Synonyms | Copper (II) Sulfate, pentahydrate    | Health 2<br>Fire 0<br>Reactivity 0                        |
| Formula           | CuSO <sub>4</sub> ·5H <sub>2</sub> O | HMIS •<br>LEAST SLIGHT MODERATE HIGH EXTREME<br>0 1 2 3 4 |
| Unit Size         | up to 2.5 Kg.                        |                                                           |
| C.A.S. No.        | 7758-99-8                            |                                                           |

| SECTION II                                   | INGREDIENTS OF MIXTURES                     | TLV Units                     |
|----------------------------------------------|---------------------------------------------|-------------------------------|
| Principal Component(s)                       | Cupric Sulfate, pentahydrate                | %<br>> 99 %<br>See Section V. |
| WARNING! HARMFUL IF SWALLOWED OR INHALED.    |                                             |                               |
| IRRITANT TO SKIN, EYES AND MUCOUS MEMBRANES. |                                             |                               |
| SECTION III                                  | PHYSICAL DATA                               |                               |
| Melting Point (°F)                           | 653°C (1207°F)                              | 2.28                          |
| Boiling Point (°F)                           | N/A                                         | N/A                           |
| Vapor Pressure (mm Hg)                       | N/A                                         | N/A                           |
| Vapor Density (Air=1)                        | N/A                                         | N/A                           |
| Solubility in Water                          | Appreciable (>10%)                          |                               |
| Appearance & Odor                            | Blue crystals or fine blue powder; no odor. |                               |

| SECTION IV                | FIRE AND EXPLOSION HAZARD DATA                            |
|---------------------------|-----------------------------------------------------------|
| Flash Point (Method Used) | Non-flammable.                                            |
| Extinguisher Media        | Use any media suitable for extinguishing supporting fire. |

**SPECIAL FIREFIGHTING PROCEDURES**  
In fire conditions, firefighters should wear protective clothing and a NIOSH/MSHA-approved self-contained breathing apparatus. Cupric Sulfate will not burn, nor will it support combustion. Care should be used to keep material out of streams or other water bodies.

(1986 EMERGENCY RESPONSE GUIDEBOOK, DOT P. 5800.7, GUIDE PAGE NO. 171)

**UNUSUAL FIRE AND EXPLOSION HAZARDS**  
Fire or excessive heat may produce hazardous decomposition products as dust or fume.

D.O.T. 10. UNUSUALLY HAZARDOUS SUBSTANCE, solid, n.o.s., (Cupric sulfate), 9. UN 3077, PG III  
Approved by U.S. Department of Labor "essentially similar" to form OSHA-20

SECTION V HEALTH HAZARD DATA  
Threshold Limited Value

Effects of Overexposure  
kidneys. INGESTION: Copper salts impart a metallic taste in mouth. May cause irritation of the mouth and throat. May cause irritation of the eyes, nose and burns of the cornea. SKIN: Causes irritation. May cause allergic reactions. INHALATION: Causes upper respiratory irritation and congestion of the nose and mucous membranes.

| Emergency and First Aid Procedures                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| INHALATION: Remove to fresh air. If breathing has stopped, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention. EYES: Flush thoroughly with water for at least 15 minutes, lifting upper and lower eyelids occasionally. Get medical attention. SKIN: Flush with water, then wash with mild soap and water. INGESTION: If swallowed, if conscious, give one or two glasses of water to drink, induce vomiting and call physician. Never give anything by mouth to an unconscious person. |

| SECTION VI                           | REACTIVITY DATA                                                                                                                                                                                                                                                       |
|--------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Stability                            | Unstable<br>Stable X                                                                                                                                                                                                                                                  |
| Incompatibility (Materials to Avoid) | Excessive temperature and heat<br>Incompatible with acetylene. Copper salts may react to form explosive acetylides. Copper sulfate can cause ignition upon contact with hydroxylamine due to the release of heat. Reducing agents react vigorously with copper salts. |
| Hazardous Decomposition Products     | Combustion may produce irritating copper fumes and toxic gaseous oxides (sulfur oxides).                                                                                                                                                                              |
| May Occur                            | Will Not Occur X                                                                                                                                                                                                                                                      |
| Conditions to Avoid                  | Not applicable.                                                                                                                                                                                                                                                       |

| SECTION VII                                               | SPILL OR LEAK PROCEDURES                                                                                                                                                                                                                 |
|-----------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Steps to be taken in case material is released or spilled | Ventilate the area. Sprinkle lime or soda ash on spill to form insoluble copper salt. Sweep up and place in a suitable container for disposal. Wash spill area with soap and water. Prevent material from entering sewers and waterways. |

**Waste Disposal Method**  
Discharge, treatment, or disposal may be subject to Federal, State or Local laws. These disposal guidelines are intended for the disposal of small quantities only. Dispose of in an approved chemical landfill or contract with a waste disposal agency.

| SECTION VIII                         | SPECIAL PROTECTION INFORMATION                                                                                                                     |
|--------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------|
| Respirator Protection (Specify type) | None should be required in normal laboratory use. If dusty conditions prevail, work in a ventilation hood or wear a NIOSH/MSHA-approved dust mask. |
| Ventilation                          | Local Exhaust Recommended Special No.<br>Mechanical (General) Recommended Other No.                                                                |
| Protective Gloves                    | Rubber.                                                                                                                                            |
| Other Protective Equipment           | Safety glasses, smock, apron, vented hood, proper gloves, and eye wash station.                                                                    |
| Eye Protection                       | Chemical safety goggles.                                                                                                                           |

| SECTION IX                                    | SPECIAL PRECAUTIONS                                         |
|-----------------------------------------------|-------------------------------------------------------------|
| Precautions to be Taken in Handling & Storing | Store in a cool, dry place. Wash thoroughly after handling. |

**Other Precautions**  
Store labeled in container before use. Do not wear contact lenses when working with chemicals. Avoid contact with skin, eyes and clothing. Avoid breathing dust. Use with adequate ventilation. Remove and wash contaminated clothing.

For laboratory use only. Not for drug, food or household use. Keep out of reach of children.  
Revision No. 6 Date 2/17/99 Approved Michael Haszela  
Coordinator  
The information contained herein is a statement of the manufacturer's best knowledge and belief. It is not intended to be a substitute for other information. The user should consult a competent professional for advice on the safety and health of employees. \* Hazardous Materials Identification Standards. Printed on recycled paper.

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