

\*\*\*CUPRIC SULFATE\*\*\*  
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MATERIAL SAFETY DATA SHEET

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SUBSTANCE IDENTIFICATION

SUBSTANCE: [REDACTED]

CAS-NUMBER 7758-98-7

TRADE NAMES/SYNONYMS:  
 CUPRIC SULFATE ANHYDROUS; COPPER(II)SULFATE; COPPER SULFATE;  
 CUPRIC SULPHATE; SULFURIC ACID, COPPER(2+) SALT; ROMAN VITRIOL;  
 BLUE VITRIOL; BLUE COPPER; COPPER MONOSULFATE; C-489; C-490; C-493; C-495;  
 ACC05670

CHEMICAL FAMILY:  
 INORGANIC SALT

MOLECULAR FORMULA: CU-S-04

MOL WT: 159.60

CERCLA RATINGS (SCALE 0-3): HEALTH=3 FIRE=0 REACTIVITY=0 PERSISTENCE=3

COMPONENTS AND CONTAMINANTS

COMPONENT: CUPRIC SULFATE

PERCENT: 100.0

OTHER CONTAMINANTS: NONE

EXPOSURE LIMITS:  
 1 MG(CU)/M3 OSHA TWA (DUST AND MIST)  
 1 MG(CU)/M3 ACGIH TWA (DUST AND MIST)

PHYSICAL DATA

DESCRIPTION: GRAYISH-WHITE TO GREENISH-WHITE RHOMBIC CRYSTALS

MELTING POINT: SL DECOMP >200 C SPECIFIC GRAVITY: 3.6

PH: 4.0 (0.2 M SOLUTION) SOLUBILITY IN WATER: 12.5% @ 0 C

FIRE AND EXPLOSION DATA

FIRE AND EXPLOSION HAZARD:  
NEGLECTIBLE FIRE HAZARD WHEN EXPOSED TO HEAT OR FLAME.

FLASH POINT: NON-FLAMMABLE

FIREFIGHTING MEDIA:  
DRY CHEMICAL, CARBON DIOXIDE, WATER SPRAY OR FOAM  
(1984 EMERGENCY RESPONSE GUIDEBOOK, DOT P 5800.3).

FOR LARGER FIRES, USE WATER SPRAY, FOG OR ALCOHOL FOAM  
(1984 EMERGENCY RESPONSE GUIDEBOOK, DOT P 5800.3).

FIREFIGHTING:  
IRRITATING AGENT- USE EXTINGUISHING AGENT SUITABLE FOR TYPE OF SURROUNDING  
FIRE. MATERIAL ITSELF DOES NOT BURN READILY. USE FLOODING QUANTITIES OF WATER  
AS A FOG AND TO COOL ALL CONTAINERS INVOLVED IN FIRE. ABSORB VAPORS WITH WATER  
SPRAY. ALWAYS APPLY FOG DOWNWIND.

TOXICITY

200 MG/KG ORAL-CHILD TDLO; 11 MG/KG ORAL-HUMAN TDLO; 50 MG/KG ORAL-HUMAN LDLO;  
300 MG/KG ORAL-RAT LD50; MUTAGENIC DATA (RTCS); REPRODUCTIVE EFFECTS DATA  
(RTCS); TUMORIGENIC DATA (RTCS); CARCINOGEN STATUS: NONE. COPPER DUST AND  
MISTS ARE SKIN, EYE AND MUCOUS MEMBRANE IRRITANTS AND A SKIN SENSITIZER.  
CUPRIC SULFATE MAY CAUSE LIVER AND/OR KIDNEY DAMAGE, AND HEMORRHAGIC  
GASTROENTERITIS. PERSONS WITH A HISTORY OF CHRONIC RESPIRATORY OR SKIN DISEASE  
MAY BE AT INCREASED RISK FROM EXPOSURE.

HEALTH EFFECTS AND FIRST AID

INHALATION:

IRRITANT.  
ACUTE EXPOSURE- INHALATION OF COPPER DUSTS AND MISTS MAY CAUSE CONGESTION  
AND IRRITATION OF THE NASAL MUCOUS MEMBRANES AND SOMETIMES  
THE PHARYNX.

CHRONIC EXPOSURE- REPEATED INHALATION OF COPPER DUSTS AND MISTS HAVE, ON  
OCCASION, CAUSED ULCERATION WITH PERFORATION OF THE NASAL  
SEPTUM. SEE ANIMAL MUTAGENIC REFERENCE IN TOXICITY  
SECTION.

FIRST AID- REMOVE FROM EXPOSURE AREA TO FRESH AIR IMMEDIATELY. IF BREATHING  
HAS STOPPED, PERFORM ARTIFICIAL RESPIRATION. KEEP PERSON WARM AND AT REST.  
GET MEDICAL ATTENTION IMMEDIATELY.

SKIN CONTACT:

IRRITANT.  
ACUTE EXPOSURE- CONTACT CAUSES IRRITATION AND ITCHING. SENSITIZATION  
DERMATITIS MAY OCCUR IN INDIVIDUALS PREVIOUSLY EXPOSED. POISONING MAY  
OCCUR FROM APPLICATION OF CUPRIC SULFATE TO EXTENSIVE AREAS OF BURNED

SKIN.

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CHRONIC EXPOSURE- SENSITIZATION DERMATITIS MAY OCCUR, WITH ITCHING AND NECROSIS. SEE ANIMAL MUTAGENIC REFERENCE IN TOXICITY SECTION.

FIRST AID- REMOVE CONTAMINATED CLOTHING AND SHOES. WASH AFFECTED AREAS WITH SOAP OR MILD DETERGENT AND LARGE AMOUNTS OF WATER UNTIL NO EVIDENCE OF CHEMICAL REMAINS (APPROXIMATELY 15-20 MINUTES). GET MEDICAL ATTENTION.

EYE CONTACT:  
IRRITANT.

ACUTE EXPOSURE- CONTACT MAY CAUSE IRRITATION AND CONJUNCTIVITIS.

CHRONIC EXPOSURE- REPEATED OR PROLONGED CONTACT MAY CAUSE CONJUNCTIVITIS, CORNEAL ULCERATION AND TURBIDITY.

FIRST AID- WASH EYES IMMEDIATELY WITH LARGE AMOUNTS OF WATER, OCCASIONALLY LIFTING THE UPPER AND LOWER LIDS, UNTIL NO EVIDENCE OF CHEMICAL REMAINS (APPROXIMATELY 15-20 MINUTES). GET MEDICAL ATTENTION.

INGESTION:

ACUTE EXPOSURE- SMALL AMOUNTS OF INGESTED CUPRIC SULFATE MAY CAUSE SALIVATION, NAUSEA, VOMITING, GASTRIC PAIN, HEMORRHAGIC GASTRITIS, AND BLOODY DIARRHEA.

FIRST AID- IF VICTIM IS CONSCIOUS, IMMEDIATELY GIVE 2 TO 4 GLASSES OF WATER, AND INDUCE VOMITING BY TOUCHING FINGER TO BACK OF THROAT. GET MEDICAL ATTENTION IMMEDIATELY.

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REACTIVITY

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REACTIVITY:  
STABLE AT ORDINARY PRESSURES, TEMPERATURES, AND HUMIDITIES. HOWEVER, THE PENTAHYDRATE LOSES 2H<sub>2</sub>O AT 30 C AND ANOTHER 2H<sub>2</sub>O AT 110 C. SLOWLY EFFLORESCENT IN AIR AT ROOM TEMPERATURE.

INCOMPATIBILITIES:

HYDROXYLAMINE: MAY BE IGNITED WHEN MIXED WITH ANHYDROUS COPPER SULFATE.  
MAGNESIUM: PRODUCES HYDROGEN WHEN MIXED.  
SODIUM HYPOBROMITE: DECOMPOSES WHEN MIXED.

DECOMPOSITION:  
THERMAL DECOMPOSITION PRODUCTS INCLUDE TOXIC GASES.

POLYMERIZATION:  
HAZARDOUS POLYMERIZATION HAS NOT BEEN REPORTED TO OCCUR UNDER NORMAL TEMPERATURES AND PRESSURES.

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CONDITIONS TO AVOID

AVOID THERMAL DECOMPOSITION AT 650 C FOR ANHYDROUS. AVOID CONTACT OR STORAGE  
WITH INCOMPATIBLE SUBSTANCES LISTED IN THE REACTIVITY SECTION.



LENSES WHEN WORKING WITH CHEMICALS.

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