



15 Erie Drive
Natick, MA 01760
Phone: 508.655.4336
Fax: 508.655.2754
www.americanbio.com
In case of emergency call 3E at 800.451.8346

MATERIAL SAFETY DATA SHEET:
CUPRIC SULFATE, PENTAHYDRATE
CATALOG NUMBER: AB00373

SECTION I – PRODUCT INFORMATION

PRODUCT NAME: CUPRIC SULFATE, PENTAHYDRATE
GRADE: ULTRA PURE/ACS/USP
PHYSICAL DESCRIPTION: BLUE CRYSTALLINE POWDER

SECTION II – COMPOSITION/INFORMATION ON INGREDIENT

SUBSTANCE NAME: CUPRIC SULFATE, PENTAHYDRATE
CAS NUMBER: 7758-99-8
SARA 313: YES
FORMULA: $\text{CuSO}_4 \cdot 5\text{H}_2\text{O}$
FORMULA WEIGHT: 249.68
RTECS NUMBER: GL8900000

SECTION III – HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

TOXIC (USA) HARMFUL (EU). DANGEROUS FOR THE ENVIRONMENT. HARMFUL IF SWALLOWED. IRRITATING TO EYES, SKIN. VERY TOXIC TO AQUATIC ORGANISMS, MAY CAUSE LONG-TERM ADVERSE EFFECTS IN THE AQUATIC ENVIRONMENT. POSSIBLE SENSITIZER. TARGET ORGANS: LIVER. KIDNEYS.

HMS RATING

HEALTH: 2*
FLAMMABILITY: 0
REACTIVITY: 1
NFPA RATING
HEALTH: 2
FLAMMABILITY: 0
REACTIVITY: 1

*ADDITIONAL CHRONIC HAZARDS PRESENT.

FOR ADDITIONAL INFORMATION ON TOXICITY, PLEASE REFER TO SECTION XI.

SECTION IV – FIRST AID MEASURES

ORAL EXPOSURE: IF SWALLOWED, WASH OUT MOUTH WITH WATER PROVIDED PERSON IS CONSCIOUS. CALL A PHYSICIAN.

INHALATION EXPOSURE: IF INHALED, REMOVE TO FRESH AIR. IF BREATHING BECOMES DIFFICULT, CALL A PHYSICIAN.

DERMAL EXPOSURE: IN CASE OF CONTACT, IMMEDIATELY WASH SKIN WITH SOAP AND COPIOUS AMOUNTS OF WATER.

EYE EXPOSURE: IN CASE OF CONTACT WITH EYES, FLUSH WITH COPIOUS AMOUNTS OF WATER FOR AT LEAST 15 MINUTES. ASSURE ADEQUATE FLUSHING BY SEPARATING THE EYELIDS WITH FINGERS. CALL A PHYSICIAN.

SECTION V – ACCIDENTAL RELEASE MEASURES

FLASH POINT: N/A

AUTOIGNITION: N/A

FLAMMABILITY: N/A

EXTINGUISHING MEDIA: SUITABLE: WATER SPRAY. CARBON DIOXIDE, DRY CHEMICAL POWDER OR APPROPRIATE FOAM.

FIREFIGHTING: PROTECTIVE EQUIPMENT: WEAR SELF CONTAINED BREATHING APPARATUS AND PROTECTIVE CLOTHING TO PREVENT CONTACT WITH SKIN AND EYES.

SPECIFIC HAZARD: EMITS TOXIC FUMES UNDER FIRE CONDITIONS.

SECTION VI – ACCIDENTAL RELEASE MEASURES

PROCEDURES TO BE FOLLOWED IN CASE OF LEAK OR SPILL: EVACUATE AREA.

PROCEDURES OF PERSONAL PRECAUTIONS: WEAR RESPIRATOR, CHEMICAL SAFETY GOGGLES, RUBBER BOOTS, AND HEAVY RUBBER GLOVES.

METHODS FOR CLEANING UP: SWEEP UP, PLACE IN AA BAG AND HOLD FOR WASTE DISPOSAL. AVOID RAISING DUST. VENTILATE AREA AND WASH SPILL SITE AFTER MATERIAL IS PICKUP COMPLETE.

SECTION VII – HANDLING AND STORAGE

HANDLING: USER EXPOSURE: AVOID INHALATION. AVOID CONTACT WITH EYES, SKIN, AND CLOTHING. AVOID PROLONGED OR REPEATED EXPOSURE.

STORAGE: SUITABLE: KEEP TIGHTLY CLOSED. STORE IN A COOL DRY PLACE.

SPECIAL REQUIREMENTS: AIR SENSITIVE. HYGROSCOPIC. HANDLE AND STORE UNDER INERT GAS.

SECTION VIII – EXPOSURE CONTROLS/PPE

ENGINEERING CONTROLS: SAFETY SHOWER AND EYE BATH. MECHANICAL EXHAUST REQUIRED.

PERSONAL PROTECTIVE EQUIPMENT

RESPIRATORY: GOVERNMENT APPROVED RESPIRATOR.

HAND: COMPATIBLE CHEMICAL-RESISTANT GLOVES.

EYE: CHEMICAL SAFETY GOGGLES.

GENERAL HYGIENE MEASURES: WASH THOROUGHLY AFTER HANDLING.

SECTION IX – PHYSICAL/CHEMICAL PROPERTIES

APPEARANCE

COLOR: BLUE

FORM: CRYSTALS

MOLECULAR WEIGHT: 249.68 AMU

PH: 3.7 - 4.5

MP/MP RANGE: 110°C

VAPOR PRESSURE: 7.3 MMHG 25°C

SG/DENSITY: 2.284 G/CM³

SECTION X – STABILITY AND REACTIVITY

STABILITY: STABLE

CONDITIONS TO AVOID: AIR SENSITIVE. HYGROSCOPIC.

MATERIALS TO AVOID: FINELY POWDERED METALS ANHYROUS COPPER (II), SULFATE
REACTS VIOLENTLY WITH: HYDROXYLAMINE, MAGNESIUM.

HAZARDOUS DECOMPOSITION PRODUCTS: HAZARDOUS DECOMPOSITION PRODUCTS:
COPPER OXIDE, SULFUR OXIDES.

HAZARDOUS POLYMERIZATION: WILL NOT OCCUR.

SECTION XI – TOXICOLOGICAL INFORMATION

ROUTE OF EXPOSURE

SKIN CONTACT: CAUSES SKIN IRRITATION

SKIN ABSORPTION: MAY BE HARMFUL IF ABSORBED THROUGH THE SKIN.

EYE CONTACT: CAUSES EYE IRRITATION.
INHALATION: MATERIAL MAY BE IRRITATING TO MUCOUS MEMBRANES AND UPPER RESPIRATORY TRACT. MAY BE HARMFUL IF INHALED.
INGESTION: HARMFUL IF SWALLOWED.
SENSITIZATION: SKIN – PROLONGED OR REPEATED EXPOSURE MAY CAUSE ALLERGIC REACTIONS IN CERTAIN SENSITIVE INDIVIDUALS.
TARGET ORGANS OR SYSTEMS: LIVER. KIDNEYS. BLOOD.
SIGNS AND SYMPTOMS OF EXPOSURE: CHRONIC COPPER POISONING IS TYPIFIED BY HEPATIC CIRRHOSIS, BRAIN DAMAGE AND DEMYELINATION, KIDNEY DEFECTS, AND COPPER DEPOSITION IN THE CORNEA AS EXEMPLIFIED BY HUMANS WITH WILSON'S DISEASE. IT HAS ALSO BEEN REPORTED THAT COPPER POISONING HAS LEAD TO HEMOLYTIC ANEMIA AND ACCELERATES ARTERIOSCLEROSIS. TO THE BEST OF OUR KNOWLEDGE, THE CHEMICAL, PHYSICAL, AND TOXICOLOGICAL PROPERTIES HAVE NOT BEEN THOROUGHLY INVESTIGATED.

SECTION XII – ECOLOGICAL INFORMATION

NO DATA AVAILABLE.

SECTION XIII – DISPOSAL INFORMATION

APPROPRIATE METHOD OF DISPOSAL OF SUBSTANCE OR PREPARATION
CONTACT A LICENSED PROFESSIONAL WASTE DISPOSAL SERVICE TO DISPOSE OF THIS MATERIAL. DISSOLVE OR MIX THE MATERIAL WITH A COMBUSTIBLE SOLVENT AND BURN IN A CHEMICAL INCINERATOR EQUIPPED WITH AN AFTERBURNER AND SCRUBBER.
OBSERVE ALL FEDERAL, STATE, AND LOCAL ENVIRONMENTAL REGULATIONS.

SECTION XIV – TRANSPORT INFORMATION

DOT – PROPER SHIPPING NAME: ENVIRONMENTALLY HAZARDOUS SUBSTANCES, SOLID, N.O.S.

UN # 3077

CLASS: 9

PACKING GROUP: PACKING GROUP III

HAZARD LABEL: CLASS 9

PIH: NOT PIH

IATA: PROPER SHIPPING NAME: ENVIRONMENTALLY HAZARDOUS SUBSTANCES, SOLID, N.O.S.

IATA #: 3077

HAZARD CLASS: 9

PACKING GROUP: III

SECTION XV – REGULATORY INFORMATION

EU ADDITIONAL CLASSIFICATION

SYMBOL OF DANGER: Xn N

INDICATION OF DANGER: HARMFUL. DANGEROUS FOR THE ENVIRONMENT.

R: 22 36/38 50/53

RISK STATEMENTS: HARMFUL IF SWALLOWED. IRRITATING TO EYES AND SKIN. VERY TOXIC TO AQUATIC ORGANISMS, MAY CAUSE LONG-TERM ADVERSE EFFECTS IN THE AQUATIC ENVIRONMENT.

S: 20 60 61

SAFETY STATEMENTS: DO NOT BREATHE DUST. THIS MATERIAL AND ITS CONTAINER MUST BE DISPOSED OF AS HAZARDOUS WASTE. AVOID RELEASE TO THE ENVIRONMENT. REFER TO SPECIAL INSTRUCTIONS/SAFETY DATA SHEETS.

US CLASSIFICATION AND LABEL TEXT

INDICATION OF DANGER: TOXIC (USA) HARMFUL (EU). DANGEROUS FOR THE ENVIRONMENT.

RISK STATEMENTS: HARMFUL IF SWALLOWED. IRRITATING TO EYES, SKIN.

VERY TOXIC TO AQUATIC ORGANISMS, MAY CAUSE LONG-TERM ADVERSE EFFECTS IN THE AQUATIC ENVIRONMENT

SAFETY STATEMENTS: DO NOT BREATHE DUST. THIS MATERIAL AND ITS CONTAINER MUST BE DISPOSED OF AS HAZARDOUS WASTE. AVOID RELEASE TO THE ENVIRONMENT. REFER TO SPECIAL INSTRUCTIONS/SAFETY DATA SHEETS.

UNITED STATES REGULATORY INFORMATION

SARA LISTED: YES

DEMINIMIS: 1%

NOTES: THIS PRODUCT IS SUBJECT TO SARA SECTION 313 REPORTING REQUIREMENTS – COPPER COMPOUNDS.

CANADA REGULATORY INFORMATION

WHMIS CLASSIFICATION: THIS PRODUCT HAS BEEN CLASSIFIED IN ACCORDANCE WITH THE HAZARD CRITERIA OF THE CPR, AND THE MSDS CONTAINS ALL THE INFORMATION REQUIRED BY THE CPR.

DSL: NO

NDSL: NO

SECTION XVI – OTHER INFORMATION

FOR R&D USE ONLY. NOT FOR DRUG, HOUSEHOLD OR OTHER USES.

REVISION DATE 06/30/05