ATTN: SAFETY DIRECTOR
UNIV OF WISCONSIN - WHITewater
PURCHASING OFFICE
800 W MAIN ST
WHITewater  WI  53190-1705

EMERGENCY PHONE 1-314-771-5765
DATE 02/15/00
CUST#: 0-495-04629
PO#: 2152000

MATERIAL SAFETY DATA SHEET PAGE 1

THIS MSDS IS FOR A COMPONENT OF CATALOG #: BCA-1

SECTION 1. CHEMICAL IDENTIFICATION

CATALOG #: C2284
NAME: COPPER (II) SULFATE PENTAHYDRATE 4%
SOLUTION

SECTION 2. COMPOSITION/INFORMATION ON INGREDIENTS

CAS #: 7758-99-8

SYNONYMS:
BLUE COPPER AS * COPPER(II) SULFATE PENTAHYDRATE * COPPER(2+) SULFATE
PENTAHYDRATE * CUPRIC SULFATE PENTAHYDRATE * KUPFERSULFAT-PENTAHYDRAT
(GERMAN) * KUPPERVITRIOL (GERMAN) * SALZBURG VITRIOL * SULFURIC ACID,
COPPER(2+) SALT, PENTAHYDRATE * SULFURIC ACID COPPER(2+) SALT (1:1):
PENTAHYDRATE (8CI, 9CI) * VENCEDOR *

SECTION 3. HAZARDS IDENTIFICATION

LABEL PRECAUTIONARY STATEMENTS
TOXIC (USA)
HARMFUL (EU)
MAY IMPAIR FERTILITY
POSSIBLE RISK OF HARM TO THE UNBORN CHILD.
HARMFUL IF SWALLOWED.
RISK OF SERIOUS DAMAGE TO EYES.
IRRITATING TO RESPIRATORY SYSTEM AND SKIN.
MAY CAUSE SENSITIZATION BY SKIN CONTACT.
TARGET ORGAN(S):
LIVER
KIDNEYS

IN CASE OF ACCIDENT OR IF YOU FEEL UNWELL, SEEK MEDICAL ADVICE IMMEDIATELY (SHOW THE LABEL WHERE POSSIBLE).
IN CASE OF CONTACT WITH EYES, RINSE IMMEDIATELY WITH PLENTY OF
WATER AND SEEK MEDICAL ADVICE.
WEAR SUITABLE PROTECTIVE CLOTHING, GLOVES AND EYE/FACE
PROTECTION.

SECTION 4. FIRST-AID MEASURES

IN CASE OF CONTACT, IMMEDIATELY WASH SKIN WITH SOAP AND COPIOUS
AMOUNTS OF WATER.
IN CASE OF CONTACT, IMMEDIATELY FLUSH EYES WITH COPIOUS AMOUNTS OF
WATER FOR AT LEAST 15 MINUTES.
IF INHALED, REMOVE TO FRESH AIR. IF NOT BREATHING GIVE ARTIFICIAL
RESPIRATION. IF BREATHING IS DIFFICULT, GIVE OXYGEN.
IF SWALLOWED, WASH OUT MOUTH WITH WATER PROVIDED PERSON IS CONSCIOUS.
CALL A PHYSICIAN.

CONTINUED ON NEXT PAGE
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CATALOG #: C2284
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REMOVE AND WASH CONTAMINATED CLOTHING PROMPTLY.

SECTION 5. --- --- --- --- FIRE FIGHTING MEASURES --- --- --- ---

EXTINGUISHING MEDIA
NONCOMBUSTIBLE.
USE EXTINGUISHING MEDIA APPROPRIATE TO SURROUNDING FIRE CONDITIONS.

SPECIAL FIREFIGHTING PROCEDURES
WEAR SELF-CONTAINED BREATHING APPARATUS AND PROTECTIVE CLOTHING TO PREVENT CONTACT WITH SKIN AND EYES.

UNUSUAL FIRE AND EXPLOSIONS HAZARDS
EMITS TOXIC FUMES UNDER FIRE CONDITIONS.

SECTION 6. --- --- --- --- ACCIDENTAL RELEASE MEASURES--- --- --- ---

WEAR RESPIRATOR, CHEMICAL SAFETY GOGGLES, RUBBER BOOTS AND HEAVY RUBBER GLOVES.
ABSORB ON SAND OR VERMICULATE AND PLACE IN CLOSED CONTAINERS FOR DISPOSAL.
VENTILATE AREA AND WASH SPILL SITE AFTER MATERIAL PICKUP IS COMPLETE.

SECTION 7. --- --- --- --- HANDLING AND STORAGE--- --- --- ---

REFER TO SECTION 8.

SECTION 8. --- --- --- --- EXPOSURE CONTROLS/PERSONAL PROTECTION--- --- --- ---

WEAR APPROPRIATE NIOSH/MSHA-APPROVED RESPIRATOR, CHEMICAL-RESISTANT GLOVES, SAFETY GOGGLES, OTHER PROTECTIVE CLOTHING.
USE ONLY IN A CHEMICAL FUME HOOD.
SAFETY SHOWER AND EYE BATH.
DO NOT BREATHE VAPOR.
DO NOT GET IN EYES, ON SKIN, OR CLOTHING.
KEEP TIGHTLY CLOSED.
WASH THOROUGHLY AFTER HANDLING.
STORE IN A COOL, DRY PLACE.

SECTION 9. --- --- --- --- PHYSICAL AND CHEMICAL PROPERTIES --- --- --- ---

APPEARANCE AND ODOR LIQUID.

PHYSICAL PROPERTIES
SPECIFIC GRAVITY: 2.284

SECTION 10. --- --- --- --- STABILITY AND REACTIVITY --- --- --- ---

INCOMPATIBILITIES SENSITIVE TO AIR

CONTINUED ON NEXT PAGE

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THIS MSDS IS FOR A COMPONENT OF CATALOG #: BCA-1

CATALOG #: C2284
NAME: COPPER (II) SULFATE PENTAHYDRATE 4% SOLUTION

CORRODES STEEL
FINELY POWDERED METALS
HEAT

HAZARDOUS COMBUSTION OR DECOMPOSITION PRODUCTS
TOXIC FUMES OF:
SULFUR OXIDES

SECTION 11. TOXICOLOGICAL INFORMATION

ACUTE EFFECTS
HARMFUL IF SWALLOWED.
MAY BE HARMFUL IF INHALED.
MAY BE HARMFUL IF ABSORBED THROUGH THE SKIN.
CAUSES SEVERE EYE IRRITATION.
CAUSES SKIN IRRITATION.
MATERIAL IS IRRITATING TO MUCOUS MEMBRANES AND UPPER RESPIRATORY TRACT.
MAY CAUSE ALLERGIC SKIN REACTION.
ABSORPTION INTO THE BODY LEADS TO THE FORMATION OF METHEMOGLOBIN WHICH IN SUFFICIENT CONCENTRATION CAUSES CYANOSIS. ONSET MAY BE DELAYED 2 TO 4 HOURS OR LONGER.
EXPOSURE CAN CAUSE:
DAMAGE TO THE EYES
GASTROINTESTINAL DISTURBANCES

CHRONIC EFFECTS
POSSIBLE RISK OF CONGENITAL MALFORMATION IN THE FETUS.
MAY CAUSE REPRODUCTIVE DISORDERS.
TARGET ORGAN(S):
LIVER
KIDNEYS
BLOOD

ADDITIONAL INFORMATION
CHRONIC COPPER POISONING IS TYPIFIED BY HEPATIC CIRRHOSIS, BRAIN DAMAGE AND DEMYELENATION, 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.

RTECS #: GL8900000
COPPER(II) SULFATE, PENTAHYDRATE (1:1:5)

TOXICITY DATA

ORL-HMN LDLO: 1088 MG/KG
UNR-MAN LDLO: 221 MG/KG
ORL-RAT LD50: 300 MG/KG
SKN-RAT LD50: 32 GM/KG
IPR-RAT LD50: 18700 MG/KG
IPR-MUS LD50: 33 MG/KG

IPRAA8 18,807,1965
85DCAI 2,73,1970
85ARAQ 2,182,1977
NNGADV 18, S161, 1993
G1SAA5 53(4), 78, 1988
BCPC6 4,289,1965

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THIS MSDS IS FOR A COMPONENT OF CATALOG #: BCA-1

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IPR-MAM LD50: 7500 UG/KG JANSAG 55,337,1982

TARGET ORGAN DATA
AUTONOMIC NERVOUS SYSTEM (OTHER: PARASYMPATHOMIMETIC)
BEHAVIORAL (SOMNOLENCE)
BEHAVIORAL (COMA)
GASTROINTESTINAL (CHANGES IN STRUCTURE OR FUNCTION OF SALIVARY GLANDS)
GASTROINTESTINAL (HYPERMOTILITY, DIARRHEA)
GASTROINTESTINAL (NAUSEA OR VOMITING)
LIVER (JAUNDICE, HEPATOCELULAR)
KIDNEY, URETER, BLADDER (OTHER CHANGES)
BLOOD (HEMORRHAGE)
BLOOD (OTHER HEMOLYSIS WITH OR WITHOUT ANEMIA)
NUTRITIONAL AND GROSS METABOLIC (WEIGHT LOSS OR DECREASED WEIGHT GAIN)
ONLY SELECTED REGISTRY OF TOXIC EFFECTS OF CHEMICAL SUBSTANCES (RTECS) DATA IS PRESENTED HERE. SEE ACTUAL ENTRY IN RTECS FOR COMPLETE INFORMATION.

SECTION 12. ECOLOGICAL INFORMATION
DATA NOT YET AVAILABLE.

SECTION 13. DISPOSAL CONSIDERATIONS
CONTACT A LICENSED PROFESSIONAL WASTE DISPOSAL SERVICE TO DISPOSE OF THIS MATERIAL.
OBSERVE ALL FEDERAL, STATE AND LOCAL ENVIRONMENTAL REGULATIONS.

SECTION 14. TRANSPORT INFORMATION
CONTACT SIGMA CHEMICAL COMPANY FOR TRANSPORTATION INFORMATION.

SECTION 15. REGULATORY INFORMATION
EUROPEAN INFORMATION
CAUTION: SUBSTANCE NOT YET FULLY TESTED.
HARMFUL
R 60
MAY IMPAIR FERTILITY.
R 63
POSSIBLE RISK OF HARM TO THE UNBORN CHILD.
R 22
HARMFUL IF SWALLOWED.
R 41
RISK OF SERIOUS DAMAGE TO EYES.
R 37/38
IRRITATING TO RESPIRATORY SYSTEM AND SKIN.
R 43
MAY CAUSE SENSITIZATION BY SKIN CONTACT.
S 45
IN CASE OF ACCIDENT OR IF YOU FEEL UNWELL, SEEK MEDICAL ADVICE
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MATERIAL SAFETY DATA SHEET

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IMMEDIATELY (SHOW THE LABEL WHERE POSSIBLE).
S 26
IN CASE OF CONTACT WITH EYES, RINSE IMMEDIATELY WITH PLENTY OF WATER AND SEEK MEDICAL ADVICE.
S 36/37/39
WEAR SUITABLE PROTECTIVE CLOTHING, GLOVES AND EYE/FACE PROTECTION.

REVIEWS, STANDARDS, AND REGULATIONS

OEEL=MAK
EPA FIFRA 1988 PESTICIDE SUBJECT TO REGISTRATION OR RE-REGISTRATION PFRNAC 54,7740,1989
OEEL-ARAB REPUBLIC OF EGYPT:TWA 0.1 MG(CU)/M3 (FUME) JAN 1993
OEEL-AUSTRALIA:TWA 0.2 MG(CU)/M3 (FUME) JAN 1993
OEEL-AUSTRALIA:TWA 1 MG(CU)/M3 (DUST) JAN 1993
OEEL-BELGIUM:TWA 0.2 MG(CU)/M3 (FUME) JAN 1993
OEEL-BELGIUM:TWA 1 MG(CU)/M3 (DUST) JAN 1993
OEEL-FINLAND:TWA 0.2 MG(CU)/M3 (FUME) JAN 1993
OEEL-FINLAND:TWA 1 MG(CU)/M3 (DUST) JAN 1993
OEEL-GERMANY:TWA 0.1 MG(CU)/M3 (FUME) JAN 1993
OEEL-GERMANY:TWA 1 MG(CU)/M3 (DUST) JAN 1993
OEEL-HUNGARY:TWA 0.2 MG(CU)/M3; STEL 0.4 MG(CU)/M3 (DUST) JAN 1993
OEEL-INDIA:TWA 0.2 MG(CU)/M3 (FUME) JAN 1993
OEEL-THE NETHERLANDS:TWA 02 MG(CU)/M3 (FUME) JAN 1993
OEEL-THE NETHERLANDS:TWA 1 MG(CU)/M3 (DUST) JAN 1993
OEEL-THE PHILIPPINES:TWA 1.0 MG(CU)/M3 (FUME) JAN 1993
OEEL-RUSSIA:STEL 0.5 MG(CU)/M3 (DUST) JAN 1993
OEEL-SWEDEN:TWA 0.2 MG(CU)/M3 (RESP. DUST) JAN 1993
OEEL-SWEDEN:TWA 0.2 MG(CU)/M3 (FUME) JAN 1993
OEEL-SWEDEN:TWA 1 MG(CU)/M3 (TOTAL DUST) JAN 1993
OEEL-SWITZERLAND:TWA 0.1 MG(CU)/M3; STEL 0.2 MG(CU)/M3 (FUME) JAN 1993
OEEL-SWITZERLAND:TWA 1 MG(CU)/M3; STEL 1 MG(CU)/M3 JAN 1993
OEEL-THAILAND:TWA 0.1 MG(CU)/M3; FUME JAN 1993
OEEL-THAILAND:TWA 1 MG(CU)/M3 JAN 1993
OEEL-UNITED KINGDOM:TWA 0.2 MG(CU)/M3 (FUME) JAN 1993
OEEL-UNITED KINGDOM:TWA 1 MG(CU)/M3 JAN 1993
NOES 1983: HZD X5421; NIS 13; TNF 979; NOS 21; TNE 10821; TFE 3606
NTP TOXICITY STUDIES, RPT# TOX-29, SEPTEMBER 1999

U.S. INFORMATION
THIS PRODUCT IS SUBJECT TO SARA SECTION 313 REPORTING REQUIREMENTS - COPPER COMPOUNDS.

SECTION 16.  OTHER INFORMATION

THE ABOVE INFORMATION IS BELIEVED TO BE CORRECT BUT DOES NOT PURPORT TO BE ALL INCLUSIVE AND SHALL BE USED ONLY AS A GUIDE. SIGMA SHALL NOT BE HELD LIABLE FOR ANY DAMAGE RESULTING FROM HANDLING OR FROM CONTACT WITH THE ABOVE PRODUCT. SEE REVERSE SIDE OF INVOICE OR PACKING SLIP FOR ADDITIONAL TERMS AND CONDITIONS OF SALE.

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MATERIAL SAFETY DATA SHEET

THIS MSDS IS FOR A COMPONENT OF CATALOG #: BCA-1

CATALOG #: C2284
NAME: COPPER (II) SULFATE PENTAHYDRATE 4%
SOLUTION

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