

MAY 26 1995

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EMERGENCY PHONE 1-314-771-5765

DATE: 05/17/95
 CUST#: 2-097-94816
 PO#: UNE53917

M A T E R I A L S A F E T Y D A T A S H E E T P A G E 1

SECTION 1. ----- CHEMICAL IDENTIFICATION -----

PRODUCT #: F7002 NAME: FERROUS SULFATE HEPTAHYDRATE 99+%

SECTION 2. ----- COMPOSITION/INFORMATION ON INGREDIENTS -----

CAS #: 7782-63-0
 MF: FE104S1

SYNONYMS
 COPPERAS * FEOSOL * FER-IN-SOL * FERD-GRADUMET * FERROUS SULFATE
 HEPTAHYDRATE * FESOFOR * FESOTYME * GREEN VITROL * HAEMOFORT *
 IRONATE * IRON VITROL * IROSUL * MOL-IRON * PRESFERSUL * SULFERROUS *

SECTION 3. ----- HAZARDS IDENTIFICATION -----

LABEL PRECAUTIONARY STATEMENTS

HARMFUL
 HARMFUL IF SWALLOWED.
 IRRITATING TO EYES, RESPIRATORY SYSTEM AND SKIN.
 TARGET ORGAN(S):
 G.I. SYSTEM
 LIVER
 IN CASE OF CONTACT WITH EYES, RINSE IMMEDIATELY WITH PLENTY OF
 WATER AND SEEK MEDICAL ADVICE.
 WEAR SUITABLE PROTECTIVE CLOTHING.

SECTION 4. ----- FIRST-AID MEASURES -----

IN CASE OF CONTACT, IMMEDIATELY FLUSH EYES WITH COPIOUS AMOUNTS OF
 WATER FOR AT LEAST 15 MINUTES.
 IN CASE OF CONTACT, IMMEDIATELY WASH SKIN WITH SOAP AND COPIOUS
 AMOUNTS OF WATER.
 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.
 WASH CONTAMINATED CLOTHING BEFORE REUSE.

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

EXTINGUISHING MEDIA
 CARBON DIOXIDE, DRY CHEMICAL POWDER OR APPROPRIATE FOAM.
 SPECIAL FIREFIGHTING PROCEDURES

CONTINUED ON NEXT PAGE

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 BIOCHEMICALS AND DIAGNOSTIC REAGENTS

M A T E R I A L S A F E T Y D A T A S H E E T P A G E 2

PRODUCT #: F7002
 MF: FE10451

NAME: FERROUS SULFATE HEPTAHYDRATE 99+%

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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 - - - - -

EVACUATE AREA.
 WEAR RESPIRATOR, CHEMICAL SAFETY GOGGLES, RUBBER BOOTS AND HEAVY
 RUBBER GLOVES.
 SWEEP UP, PLACE IN A BAG AND HOLD FOR WASTE DISPOSAL.
 AVOID RAISING DUST.
 VENTILATE AREA AND WASH SPILL SITE AFTER MATERIAL PICKUP IS COMPLETE.

SECTION 7. - - - - - HANDLING AND STORAGE - - - - -
 REFER TO SECTION 8.

ADDITIONAL INFORMATION
 MIXING IRON(II) SULFATE WITH SODIUM NITRATE AND ARSENIC(III) OXIDE
 RESULTED IN SPONTANEOUS IGNITION. ADDITION OF TRACE AMOUNTS OF
 IRON(II) SULFATE TO METHYL ISOCYANACETATE RESULTED IN EXPLOSIVE
 DECOMPOSITION AT 25 C. INCOMPATIBLE WITH ALKALIES, CARBONATES, SILVER
 AND GOLD SALTS, POTASSIUM IODIDE, LEAD ACETATE, SODIUM BORATE,
 POTASSIUM AND SODIUM TARTARATE.

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

WEAR APPROPRIATE NIOSH/MSHA-APPROVED RESPIRATOR, CHEMICAL-RESISTANT
 GLOVES, SAFETY GOGGLES, OTHER PROTECTIVE CLOTHING.
 SAFETY SHOWER AND EYE BATH.
 MECHANICAL EXHAUST REQUIRED.
 DO NOT BREATHE DUST.
 AVOID CONTACT WITH EYES, SKIN AND CLOTHING.
 AVOID PROLONGED OR REPEATED EXPOSURE.
 WASH THOROUGHLY AFTER HANDLING.
 IRRITANT.
 HARMFUL SOLID.
 KEEP TIGHTLY CLOSED.
 AIR AND MOISTURE SENSITIVE
 STORE IN A COOL DRY PLACE.

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

APPEARANCE AND ODOR
LIGHT-BLUE OR LIGHT BLUE-GREEN
VAPOR PRESSURE: 14.6MM 25 C
SPECIFIC GRAVITY: 1.898

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

INCOMPATIBILITIES
STRONG OXIDIZING AGENTS
AIR SENSITIVE
MOISTURE SENSITIVE
HAZARDOUS COMBUSTION OR DECOMPOSITION PRODUCTS
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 EYE AND SKIN IRRITATION.
MATERIAL IS IRRITATING TO MUCOUS MEMBRANES AND UPPER
RESPIRATORY TRACT.
TARGET ORGAN(S):
G.I. SYSTEM
LIVER

TO THE BEST OF OUR KNOWLEDGE, THE CHEMICAL, PHYSICAL, AND
TOXICOLOGICAL PROPERTIES HAVE NOT BEEN THOROUGHLY INVESTIGATED.

ADDITIONAL INFORMATION
INGESTION OF 5 GRAMS (1/6 OUNCE) OR LESS CAN PRODUCE DROWSINESS,
IRRITABILITY, WEAKNESS, ABDOMINAL PAIN, NAUSEA, VOMITING AND BLOODY
STOOLS. DELAYED SYMPTOMS CAN INCLUDE FLUID IN THE LUNGS, LIVER
ABNORMALITIES, SHOCK, COMA, INTESTINAL BLOCKAGE AND BREAKDOWN OF THE
STOMACH AND INTESTINAL LINING, TACHYCARDIA. DEATH HAS RESULTED FROM
INGESTION OF LESS THAN AN OUNCE.

RTECS NO: NC8510000
IRON(II) SULFATE (1:1), HEPTAHYDRATE

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NAME: FERROUS SULFATE HEPTAHYDRATE 99+%

CUST#: 2-097-94816
 PO#: UNE53917

TOXICITY DATA

ORL-MUS LD50:1520 MG/KG
 IPR-MUS LD50:245 MG/KG
 IVN-MUS LD50:51 MG/KG

AJMSA9 230,491,55
 ARZNAD 17,748,67
 AJMSA9 230,491,55

TARGET ORGAN DATA

BEHAVIORAL (SOMNOLENCE)
 CARDIAC (OTHER CHANGES)
 LUNGS, THORAX OR RESPIRATION (RESPIRATORY DEPRESSION)
 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 -----

THE MATERIAL SHOULD BE DISSOLVED IN 1) WATER; 2) ACID SOLUTION OR 3)
 OXIDIZED TO A WATER-SOLUBLE STATE. PRECIPITATE THE MATERIAL AS THE
 SULFIDE, ADJUSTING THE PH OF THE SOLUTION TO 7 TO COMPLETE PRE-
 CIPITATION. FILTER THE INSOLUBLES AND DISPOSE OF THEM IN A HAZARDOUS-
 WASTE SITE. DESTROY ANY EXCESS SULFIDE WITH SODIUM HYPOCHLORITE.
 NEUTRALIZE THE SOLUTION BEFORE FLUSHING DOWN THE DRAIN.
 OBSERVE ALL FEDERAL, STATE AND LOCAL ENVIRONMENTAL REGULATIONS.

SECTION 14. ----- TRANSPORT INFORMATION -----

CONTACT SIGMA CHEMICAL COMPANY FOR TRANSPORTATION INFORMATION.

SECTION 15. ----- REGULATORY INFORMATION -----

REVIEWS, STANDARDS, AND REGULATIONS

EPA FIFRA 1988 PESTICIDE SUBJECT TO REGISTRATION OR RE-REGISTRATION
 FEREAC 54,7740,89
 MSHA STANDARD-AIR:TWA 1 MG(Fe)/M3
 DTLVS* 3,138,71
 OEL-DENMARK:TWA 1 MG(Fe)/M3 JANUARY 1993
 OEL-FINLAND:TWA 1 MG(Fe)/M3 JANUARY 1993
 OEL-THE NETHERLANDS:TWA 1 MG(Fe)/M3 JANUARY 1993
 OEL-SWITZERLAND:TWA 1 MG(Fe)/M3 JANUARY 1993

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PRODUCT #: F7002
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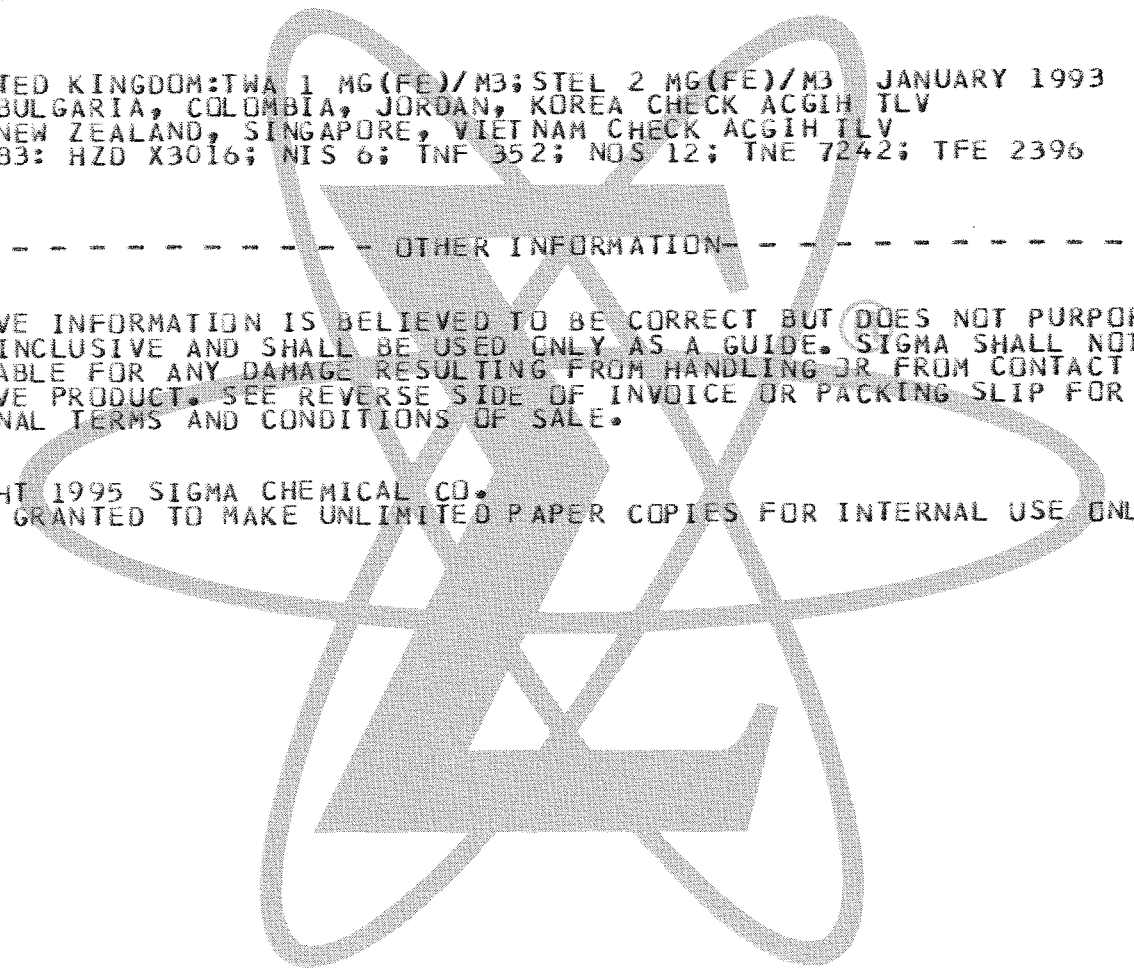
NAME: FERROUS SULFATE HEPTAHYDRATE 99+%

DEL-UNITED KINGDOM:TWA 1 MG(Fe)/M3; STEL 2 MG(Fe)/M3 JANUARY 1993
 DEL IN BULGARIA, COLOMBIA, JORDAN, KOREA CHECK ACGIH TLV
 DEL IN NEW ZEALAND, SINGAPORE, VIETNAM CHECK ACGIH TLV
 NDES 1983: HZD X3016; NIS 6; TNF 352; NOS 12; TNE 7242; TFE 2396

SECTION 16. - - - - - OTHER INFORMATION - - - - -

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