MATERIAL SAFETY DATA SHEET

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

PRODUCT #: F2877
NAME: FERRIC CHLORIDE

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

ME: CL3FE1
SYNONYMS:
FERRIC CHLORIDE, HEXAHYDRATE * FERRIC TRICHLORIDE HEXAHYDRATE * IRON (III), CHLORIDE, HEXAHYDRATE * IRON TRICHLORIDE HEXAHYDRATE *

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

LABEL PRECAUTIONARY STATEMENTS:
CORROSIVE
CAUSES BURNS.
HARMFUL BY INHALATION, IN CONTACT WITH SKIN AND IF SWALLOWED.
IN CASE OF CONTACT WITH EYES, RINSE IMMEDIATELY WITH PLENTY OF WATER AND SEEK MEDICAL ADVICE.
TAKE OFF IMMEDIATELY ALL CONTAMINATED CLOTHING.
WEAR SUITABLE PROTECTIVE CLOTHING, GLOVES AND EYE/FACE PROTECTION.

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

IN CASE OF CONTACT, IMMEDIATELY FLUSH EYES OR SKIN WITH copious
AMOUNTS OF WATER FOR AT LEAST 15 MINUTES WHILE REMOVING CONTAMINATED
CLOTHING AND SHOES.
ASSURE ADEQUATE FLUSHING OF THE EYES BY SEPARATING THE EYELIDS
WITH FINGERS.
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.

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.

CONTINUED ON NEXT PAGE
PRODUCT #: F2877  NAME: FERRIC CHLORIDE

MF: Cl3Fe1

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

SECTION 6.  ACCIDENTAL RELEASE MEASURES

WEAR SELF-CONTAINED BREATHING APPARATUS, 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 7.

ADDITIONAL INFORMATION
ALLYL CHLORIDE MAY POLYMERIZE VIOLENTLY UNDER CONDITIONS INVOLVING AN ACID CATALYST SUCH AS FERRIC CHLORIDE.

SECTION 8.  EXPOSURE CONTROLS/PERSONAL PROTECTION

CHEMICAL SAFETY GOGGLES.
RUBBER GLOVES.
SAFETY SHOWER AND EYE BATH.
USE ONLY IN A CHEMICAL FUME HOOD.
NIOSH/MSHA-APPROVED RESPIRATOR.
DO NOT BREATHE DUST.
DO NOT GET IN EYES, ON SKIN, ON CLOTHING.
WASH THOROUGHLY AFTER HANDLING.
CORROSIVE.
TOXIC.
KEEP TIGHTLY CLOSED.
STORE IN A COOL DRY PLACE.

SECTION 9.  PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE AND ODOR
YELLOW POWDER AND CHUNKS
BOILING POINT: 280 °C TO 285 °C
MELTING POINT: 37 °C

CONTINUED ON NEXT PAGE
MATERIAL SAFETY DATA SHEET

PRODUCT #: F2977
NAME: FERRIC CHLORIDE
MF: ClFe3

SPECIFIC GRAVITY: 1.653

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

INCOMPATIBILITIES
STRONG OXIDIZING AGENTS
FORMS EXPLOSIVE MIXTURES WITH:
SODIUM
POTASSIUM

HAZARDOUS COMBUSTION OR DECOMPOSITION PRODUCTS
HYDROGEN CHLORIDE GAS

SECTION 11. - - - - - - - - TOXICOLOGICAL INFORMATION - - - - - -

ACUTE EFFECTS
HARMFUL IF SWALLOWED, INHALED, OR ABSORBED THROUGH SKIN.
MATERIAL IS EXTREMELY Destructive TO TISSUE OF THE MUCOUS MEMBRANES AND UPPER RESPIRATORY TRACT, EYES AND SKIN.
INHALATION MAY BE FATAL AS A RESULT OF SPASM, INFLAMMATION AND EDEMA OF THE LARYNX AND BRONCHI.
CHEMICAL PNEUMONITIS AND PULMONARY EDEMA
SYMPTOMS OF EXPOSURE MAY INCLUDE BURNING SENSATION, COUGHING, WHEEZING, LARYNGITIS, SHORTNESS OF BREATH, HEADACHE, NAUSEA AND VOMITING.
TO THE BEST OF OUR KNOWLEDGE, THE CHEMICAL, PHYSICAL, AND TOXICOLOGICAL PROPERTIES HAVE NOT BEEN THOROUGHLY INVESTIGATED.

RTECS NO: NO3425000
IRON(3+) CHLORIDE, HEXAHYDRATE

TOXICITY DATA
IPR-MUS LD50: 260 mg/kg
JAFCAU 14.512.66
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) CONTINUED ON NEXT PAGE

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New Delhi - 110 017
India

SIGMA-ALDRICH
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Shanghai
China
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.

SECTION 14. — — — — — — — — TRANSPORT INFORMATION — — — — — — — —

CONTACT SIGMA CHEMICAL COMPANY FOR TRANSPORTATION INFORMATION.

SECTION 15. — — — — — — — — REGULATORY INFORMATION — — — — — — — —

REVIEWS, STANDARDS, AND REGULATIONS

MSHA STANDARD-AIR: TWA 1 MG(Fe)/M3
DTLV*: 3,158,71

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
OEL-UNITED KINGDOM: TWA 1 MG(Fe)/M3 STEL 2 MG(Fe)/M3 JANUARY 1993
OEL IN BULGARIA, COLOMBIA, JORDAN, KOREA, CHECK AGCHIN TLV
OEL IN NEW ZEALAND, SINGAPORE, VIETNAM CHECK AGCHIN TLV
NOES 1983: 470 X4675; NIS 4; TNE 100; NOS 4; TNE 871; TFE 465

SECTION 16. — — — — — — — — OTHER INFORMATION — — — — — — — —

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