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

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

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

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

CAS #: 7782-63-0
MF: FeSO₄·7H₂O

SYNONYMS:
CUPPERAS * FEOSUL * FER-IN-SOL * FERO-GRADUMET * FERROUS SULFATE 
HEPTAHYDRATE * FEOSUL * FEOSUL * GREEN VITROL * HAEMOFORT * 
IRONATE * IRON VITROL * IROUSL * MOL-IRON * PRESFERUSUL * SULFERROUS *

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

LABEL PRECAUTIONARY STATEMENTS:
HARMFUL
HARMFUL IF INHALED,
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 CIPIOUS AMOUNTS OF 
WATER FOR AT LEAST 15 MINUTES.
IN CASE OF CONTACT, IMMEDIATELY WASH SKIN WITH SOAP AND CIPIOUS 
AMOUNTS OF WATER.
IF INHALED, REMOVE TO FRESH AIR. IF NOT BREATHING GIVE ARTIFICIAL 
RESPIRATIONS. 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 FIRE-FIGHTING PROCEDURES

CONTINUED ON NEXT PAGE
PRODUCT #: F7002
NAME: FERROUS SULFATE HEPTAhydrate 99+%  

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 IONIC(I) SULFATE WITH SODIUM NITRATE AND ARSENIC(III) OXIDE RESULTED IN SPONTANEOUS IGNITION. ADDITION OF TRACE AMOUNTS OF IONIC(II) SULFATE TO METHYL ISOCYANATE RESULTED IN EXPLOSIVE DECOMPOSITION AT 25 C. INCOMPATIBLE WITH ALKALIES, CARBONATES, SILVER AND GOLD SALTS, POTASSIUM IODIDE, LEAD ACETATE, SODIUM BORATE, POTASSIUM AND SODIUM TARTRATE.

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.

CONTINUED ON NEXT PAGE
SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

**APPEARANCE AND ODOR**
Light-blue or light blue-green

**VAPOR PRESSURE**: 1440 mm 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)**:
Gastrointestinal 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 (1/2 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**

CONTINUED ON NEXT PAGE
PRODUCT #: F7002  NAME: FERROUS SULFATE HEPTAHYDRATE 99+%  

TOXICITY DATA  

ORL-MUS LD50: 1520 MG/KG   
IRX-MUS LD50: 245 MG/KG  
IVN-MUS LD50: 251 MG/L  

TARGET ORGAN DATA  

BEHAVIORAL (SOMNOLENCE)  
CARDIAC (OTHER CHANGES)  
LUNGS, THORAX OR RESPIRATION (RESPIRATORY DEPRESSION)  
ONLY SELECTED REGISTRY OF TOXIC EFFECTS OF CHEMICAL SUBSTANCES (RTCS) DATA IS PRESENTED HERE. SEE ACTUAL ENTRY IN RTCS 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 PRECIPITATION. FILTER THE INSOLUBLE 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  
FERACLAC 54, 7740.89  
MSHA STANDARD-AIR: TWA 1 MG(Fe)/M3  
DTLV5: 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  

CONTINUED ON NEXT PAGE