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For Emergency Assistance involving chemicals call - CHEMTREC (800) 424-9300

The Version Date for this MSDS is : 09/13/2005

PRODUCT NAME: FERROUS SULFATE ALL GRADES - IRON SULFATE (COPPERAS)

MSDS NUMBER: MZF1804

DATE ISSUED: 9/12/2005

SUPERSEDES: 8/23/2004

ISSUED BY: 008614

FERROUS SULFATE

1. PRODUCT IDENTIFICATION

Distributed by:

Univar USA Inc.
6100 Carillon Point
Kirkland, WA 98003-7357
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SYNONYMS: FERROUS SULPHATE; IRON SULFATE; SULFURIC ACID, IRON (2+)
SALT (1:1),

CAS NO: 7720-78-7 (Anhydrous)

7782-63-0 (Heptahydrate)

17375-41-6 (Monohydrate)

MOLECULAR WEIGHT: NOT APPLICABLE TO MIXTURES.

CHEMICAL FORMULA: $\text{FeSO}_4 \cdot \text{XH}_2\text{O}$

2. COMPOSITION/INFORMATION ON INGREDIENTS

INGREDIENT CAS NO PERCENT HAZARDOUS

FERROUS SULFATE ANHYDROUS 7720-78-7 100% YES
FERROUS SULFATE HEPTAHYDRATE 7782-63-0 100% YES
FERROUS SULFATE MONOHYDRATE 17375-41-6 100% YES

3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

WARNING! HARMFUL IF SWALLOWED OR INHALED. CAUSES IRRITATION TO SKIN, EYES AND RESPIRATORY TRACT. AFFECTS THE LIVER.

POTENTIAL HEALTH EFFECTS

INHALATION:

CAUSES IRRITATION TO THE RESPIRATORY TRACT. SYMPTOMS MAY INCLUDE COUGHING, SHORTNESS OF BREATH.

INGESTION:

LOW TOXICITY IN SMALL QUANTITIES BUT LARGER DOSAGES MAY CAUSE NAUSEA, VOMITING, DIARRHEA, AND BLACK STOOL. PINK URINE DISCOLORATION IS A STRONG INDICATOR OF IRON POISONING. LIVER DAMAGE, COMA, AND DEATH FROM IRON POISONING HAS BEEN RECORDED. SMALLER DOSES ARE MUCH MORE TOXIC TO CHILDREN.

SKIN CONTACT:

CAUSES IRRITATION TO SKIN. SYMPTOMS INCLUDE REDNESS, ITCHING, AND PAIN.

EYE CONTACT:

CAUSES IRRITATION, REDNESS, AND PAIN.

CHRONIC EXPOSURE:

SEVERE OR CHRONIC FERROUS SULFATE POISONINGS MAY DAMAGE BLOOD VESSELS. LARGE CHRONIC DOSES CAUSE RICKETS IN INFANTS. CHRONIC EXPOSURE MAY CAUSE LIVER EFFECTS. PROLONGED EXPOSURE OF THE EYES MAY CAUSE DISCOLORATION.

AGGRAVATION OF PRE-EXISTING CONDITIONS:

PERSONS WITH PRE-EXISTING SKIN DISORDERS OR EYE PROBLEMS, OR IMPAIRED LIVER, KIDNEY OR RESPIRATORY FUNCTION MAY BE MORE SUSCEPTIBLE TO THE EFFECTS OF THE SUBSTANCE.

4. FIRST AID MEASURES

INHALATION:

REMOVE TO FRESH AIR. IF NOT BREATHING, GIVE ARTIFICIAL RESPIRATION. IF BREATHING IS DIFFICULT, GIVE OXYGEN. GET MEDICAL ATTENTION.

INGESTION:

INDUCE VOMITING IMMEDIATELY AS DIRECTED BY MEDICAL PERSONNEL. NEVER GIVE ANYTHING BY MOUTH TO AN UNCONSCIOUS PERSON. GET MEDICAL ATTENTION.

SKIN CONTACT:

IMMEDIATELY FLUSH SKIN WITH PLENTY OF SOAP AND WATER FOR AT LEAST 15 MINUTES. REMOVE CONTAMINATED CLOTHING AND SHOES. GET MEDICAL ATTENTION. WASH CLOTHING BEFORE REUSE. THOROUGHLY CLEAN SHOES BEFORE REUSE.

EYE CONTACT:

IMMEDIATELY FLUSH EYES WITH PLENTY OF WATER FOR AT LEAST 15 MINUTES, LIFTING LOWER AND UPPER EYELIDS OCCASIONALLY. GET MEDICAL ATTENTION IMMEDIATELY.

5. FIRE FIGHTING MEASURES

FIRE:

NOT CONSIDERED TO BE A FIRE HAZARD.

EXPLOSION:

NOT CONSIDERED TO BE AN EXPLOSION HAZARD.

FIRE EXTINGUISHING MEDIA:

USE ANY MEANS SUITABLE FOR EXTINGUISHING SURROUNDING FIRE.

SPECIAL INFORMATION:

USE PROTECTIVE CLOTHING AND BREATHING EQUIPMENT APPROPRIATE FOR THE SURROUNDING FIRE.

6. ACCIDENTAL RELEASE MEASURES

VENTILATE AREA OF LEAK OR SPILL. WEAR APPROPRIATE PERSONAL PROTECTIVE EQUIPMENT AS SPECIFIED IN SECTION 8. SPILLS: PICK UP AND PLACE IN A SUITABLE CONTAINER FOR RECLAMATION OR DISPOSAL, USING A METHOD THAT DOES NOT GENERATE DUST. US REGULATIONS (CERCLA) REQUIRE REPORTING SPILLS AND RELEASES TO SOIL, WATER AND AIR IN EXCESS OF REPORTABLE QUANTITIES. THE TOLL FREE NUMBER FOR THE US COAST GUARD NATIONAL RESPONSE CENTER IS (800) 424-8802.

7. HANDLING AND STORAGE

KEEP IN A WELL CLOSED CONTAINER STORED UNDER COLD TO WARM CONDITIONS, 2 TO 40 C, (36 TO 104F). PROTECT AGAINST PHYSICAL DAMAGE. ISOLATE FROM INCOMPATIBLE SUBSTANCES. CONTAINERS OF THIS MATERIAL MAY BE HAZARDOUS WHEN EMPTY SINCE THEY RETAIN PRODUCT RESIDUES (DUST, SOLIDS); OBSERVE ALL

WARNINGS AND PRECAUTIONS LISTED FOR THE PRODUCT.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

AIRBORNE EXPOSURE LIMITS:

-ACGIH THRESHOLD LIMIT VALUE (TLV):
1 MG/M3 (TWA) SOLUBLE IRON SALT AS FE

VENTILATION SYSTEM:

A SYSTEM OF LOCAL AND/OR GENERAL EXHAUST IS RECOMMENDED TO KEEP EMPLOYEE EXPOSURES BELOW THE AIRBORNE EXPOSURE LIMITS. LOCAL EXHAUST VENTILATION IS GENERALLY PREFERRED BECAUSE IT CAN CONTROL THE EMISSIONS OF THE CONTAMINANT AT ITS SOURCE, PREVENTING DISPERSION OF IT INTO THE GENERAL WORK AREA. PLEASE REFER TO THE ACGIH DOCUMENT, "INDUSTRIAL VENTILATION, A MANUAL OF RECOMMENDED PRACTICES", MOST RECENT EDITION, FOR DETAILS.

PERSONAL RESPIRATORS (NIOSH APPROVED):

IF THE EXPOSURE LIMIT IS EXCEEDED, A HALF-FACE DUST/MIST RESPIRATOR MAY BE WORN FOR UP TO TEN TIMES THE EXPOSURE LIMIT OR THE MAXIMUM USE CONCENTRATION SPECIFIED BY THE APPROPRIATE REGULATORY AGENCY OR RESPIRATOR SUPPLIER, WHICHEVER IS LOWEST. A FULL-FACE PIECE DUST/MIST RESPIRATOR MAY BE WORN UP TO 50 TIMES THE EXPOSURE LIMIT, OR THE MAXIMUM USE CONCENTRATION SPECIFIED BY THE APPROPRIATE REGULATORY AGENCY, OR RESPIRATOR SUPPLIER, WHICHEVER IS LOWEST. FOR EMERGENCIES OR INSTANCES WHERE THE EXPOSURE LEVELS ARE NOT KNOWN, USE A FULL-FACEPIECE POSITIVE-PRESSURE, AIR-SUPPLIED RESPIRATOR. WARNING: AIR-PURIFYING RESPIRATORS DO NOT PROTECT WORKERS IN OXYGEN-DEFICIENT ATMOSPHERES.

SKIN PROTECTION:

WEAR IMPERVIOUS PROTECTIVE CLOTHING, INCLUDING BOOTS, GLOVES, LAB COAT, APRON OR COVERALLS, AS APPROPRIATE, TO PREVENT SKIN CONTACT.

EYE PROTECTION:

USE CHEMICAL SAFETY GOGGLES AND/OR FULL FACE SHIELD WHERE DUSTING OR SPLASHING OF SOLUTIONS IS POSSIBLE. MAINTAIN EYE WASH FOUNTAIN AND QUICK-DRENCH FACILITIES IN WORK AREA.

9. PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE: BOILING POINT:

WHITE TO SLIGHTLY YELLOW TINGED NOT APPLICABLE.
POWDER.

ODOR: MELTING POINT:

ODORLESS. 500C (932F)

SOLUBILITY: VAPOR DENSITY (AIR=1):
SOLUBLE IN WATER. NO INFORMATION FOUND.

DENSITY: VAPOR PRESSURE (MM HG):
NO INFORMATION FOUND. NO INFORMATION FOUND.

PH: EVAPORATION RATE (BUAC=1):
NO INFORMATION FOUND. NO INFORMATION FOUND.

% VOLATILES BY VOLUME @ 21C (70F):
0

10. STABILITY AND REACTIVITY

STABILITY:
STABLE UNDER ORDINARY CONDITIONS OF USE AND STORAGE.

HAZARDOUS DECOMPOSITION PRODUCTS:
BURNING MAY PRODUCE SULFUR OXIDES.

HAZARDOUS POLYMERIZATION:
WILL NOT OCCUR.

INCOMPATIBILITIES:
ALKALIS, SOLUBLE CARBONATES, AND OXIDIZING MATERIALS. REACTS IN MOIST AIR
TO FORM FERRIC SULFATE.

CONDITIONS TO AVOID:
MOISTURE.

11. TOXICOLOGICAL INFORMATION

FERROUS SULFATE HEPTAHYDRATE: ORAL MOUSE LD50: 1520 MG/KG, INVESTIGATED AS
A MUTAGEN. FERROUS SULFATE ANHYDROUS: ORAL RAT LD50: 319 MG/KG;
INVESTIGATED AS A MUTAGEN, TUMORIGEN, REPRODUCTIVE EFFECTOR.

-----/CANCER LISTS/-----
---NTP CARCINOGEN---
INGREDIENT KNOWN ANTICIPATED IARC CATEGORY

FERROUS SULFATE NO NO NONE

12. ECOLOGICAL INFORMATION

ENVIRONMENTAL FATE:
NO INFORMATION FOUND.

ENVIRONMENTAL TOXICITY:
NO INFORMATION FOUND.

13. DISPOSAL CONSIDERATIONS

WHATEVER CANNOT BE SAVED FOR RECOVERY OR RECYCLING SHOULD BE MANAGED IN AN APPROPRIATE AND APPROVED WASTE DISPOSAL FACILITY. PROCESSING, USE OR CONTAMINATION OF THIS PRODUCT MAY CHANGE THE WASTE MANAGEMENT OPTIONS. STATE AND LOCAL DISPOSAL REGULATIONS MAY DIFFER FROM FEDERAL DISPOSAL REGULATIONS.

DISPOSE OF CONTAINER AND UNUSED CONTENTS IN ACCORDANCE WITH FEDERAL, STATE AND LOCAL REQUIREMENTS.

14. TRANSPORT INFORMATION

NOT REGULATED.

15. REGULATORY INFORMATION

-----/CHEMICAL INVENTORY STATUS - PART 1/-----
INGREDIENT TSCA EC JAPAN AUSTRALIA

FERROUS SULFATE (7720-78-7) YES YES YES YES

-----/CHEMICAL INVENTORY STATUS - PART 2/-----
--CANADA--
INGREDIENT KOREA DSL NDSL PHIL.

FERROUS SULFATE (7720-78-7) YES YES NO YES

-----/FEDERAL, STATE & INTERNATIONAL REGULATIONS - PART 1/-----
-SARA 302- -----SARA 313-----
INGREDIENT RQ TPQ LIST CHEMICAL CATG

FERROUS SULFATE (7720-78-7) NO NO NO NO

-----/FEDERAL, STATE & INTERNATIONAL REGULATIONS - PART 2/-----
-RCRA- -TSCA-
INGREDIENT CERCLA 261.33 8(D)

FERROUS SULFATE (7720-78-7) 1000 NO NO

CHEMICAL WEAPONS CONVENTION: NO TSCA 12(B): NO CDTA: NO
SARA 311/312: ACUTE: YES CHRONIC: YES FIRE: NO PRESSURE: NO
REACTIVITY: NO (MIXTURE / SOLID)

AUSTRALIAN HAZCHEM CODE: NONE ALLOCATED.
POISON SCHEDULE: NONE ALLOCATED.

WHMIS: THIS MSDS HAS BEEN PREPARED ACCORDING TO THE HAZARD CRITERIA OF
THE CONTROLLED PRODUCTS REGULATIONS (CPR) AND THE MSDS CONTAINS
ALL OF THE INFORMATION REQUIRED BY THE CPR.

16. OTHER INFORMATION

NFPA RATINGS:

HEALTH: 1 FLAMMABILITY: 0 REACTIVITY: 0

For Additional Information:

Contact: MSDS Coordinator - Univar USA

During business hours, Pacific Time - (425) 889-3400

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END OF MSDS