

MATERIAL SAFETY DATA SHEET

Dissolvine® E-FE-13



MSDS Ref. No.: 15708-41-5

Date Approved: 01/17/2006

Revision No.: 1

This document has been prepared to meet the requirements of the U.S. OSHA Hazard Communication Standard, 29 CFR 1910.1200; the Canada's Workplace Hazardous Materials Information System (WHMIS) and, the EC Directive, 2001/58/EC.

1. PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME:	Dissolvine® E-FE-13
MOLECULAR FORMULA:	$C_{10}H_{12}FeN_2O_8Na \cdot 3H_2O$
SYNONYMS:	Ferric sodium EDTA; CHEMICAL NAME: Ethylenediaminetetraacetic acid, ferric sodium complex
GENERAL USE:	Chelating agent / Plant nutrient

NOTE: This product is not defined and regulated as a hazardous substance. Handle in accordance with good industrial hygiene practices.

MANUFACTURER

Akzo Nobel Functional Chemicals LLC
525 West Van Buren Street
Chicago, IL 60607-3823

Product & Technical Information:
(800) 906-7979 (U.S.A.)
(312) 544-7000 (outside of U.S.A.)

EMERGENCY TELEPHONE NUMBERS

(914) 693-6946 (Akzo Nobel - U.S.A.)

For leak, fire, spill, or accident emergencies, call:

(800) 424-9300 (CHEMTREC - U.S.A.)

(703) 527-3887 (CHEMTREC - All Other Countries)

(613) 996-6666 (CANUTEC - Canada)

2. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW:

- Yellow-green odorless powder.
- CAUTION: Contact with dust may cause discomfort and/or mild irritation.

POTENTIAL HEALTH EFFECTS: Effects from overexposure may occur from inhaling, or coming into contact with skin or eyes. Acute exposure to excessive concentrations of dust may cause respiratory tract discomfort and/or mild irritation. Eye contact with dust may cause mild physical irritation.

MEDICAL CONDITIONS AGGRAVATED: No data available.

3. COMPOSITION / INFORMATION ON INGREDIENTS

Chemical Name	CAS#	Wt. %	EC No.	EC Class
EDTA, ferric sodium complex	15708-41-5	87 - 89	239-802-2	Not classified
Water	7732-18-5	11 - 13	231-791-2	Not classified

4. FIRST AID MEASURES

EYES: Flush with large quantities of water for at least 15 minutes, lifting the upper and lower eyelids intermittently. If wearing contact lenses, remove after the first five minutes and continue flushing with water. If irritation occurs and persists, get medical attention.

SKIN: Immediately flush with plenty of water while removing contaminated clothing and/or shoes, and thoroughly wash with soap and water. If irritation occurs and persists, obtain medical attention.

INGESTION: Give several glasses of water if able to swallow. DO NOT induce vomiting. If vomiting occurs, keep head below hips to reduce the risk of aspiration. Never give anything by mouth to an unconscious or convulsing person. Get medical attention if health effects occur.

INHALATION: Remove to fresh air. If breathing difficulty or discomfort occurs and persists, see a medical doctor. If breathing has stopped, give artificial respiration and see a medical doctor immediately.

NOTES TO MEDICAL DOCTOR: This product has a low order of toxicity and is considered to be practically harmless by ingestion. Treatment is symptomatic and supportive.

5. FIRE FIGHTING MEASURES

EXTINGUISHING MEDIA: Foam, CO₂ or dry chemical. Soft stream water fog only if necessary. Contain all runoff.

FIRE / EXPLOSION HAZARDS: This product is not defined as flammable or combustible. When involved in a fire, it does not contribute any unusual hazards.

FIRE FIGHTING PROCEDURES: As in any fire, prevent human exposure to fire, smoke, fumes or products of combustion. Evacuate all non-essential personnel from the fire area. Fire-fighters should wear full-face, self-contained breathing apparatus and impervious protective clothing.

FLAMMABLE LIMITS: Upper / Lower (% by volume): Not determined

SENSITIVITY TO IMPACT: It is not self-reactive and is not sensitive to impact under typical conditions of use, storage or transport.

COMMENTS: CONDITIONS OF FLAMMABILITY: Not flammable or combustible.

6. ACCIDENTAL RELEASE MEASURES

RELEASE NOTES: Keep material out of streams and sewers. Large spills should be covered to prevent dispersal. For dry material, use a wet sweeping compound or water to prevent the formation of dust. If water is used, prevent runoff or dispersion of excess liquid by diking and absorbing with a non-combustible absorbent such as clay, sand or soil. Vacuum, shovel or pump waste into a drum and label contents for disposal.

Restrict non-essential personnel from area. All personnel involved in spill cleanup should follow good industrial hygiene practices and avoid skin and eye contact by wearing appropriate personal protective equipment, as indicated in Section 8 (Exposure Controls / Personal Protection) below.

7. HANDLING AND STORAGE

HANDLING: Containers should not be opened until ready for use. Avoid inhalation and prolonged and/or repeated skin and eye contact. Minimize generation of dust.

STORAGE: Store in a cool, dry place at an ambient temperature (below 25°C / 77°F). This material is suitable for any general chemical storage area; however, store in PVC, PE, stainless steel or bituminized tanks. Isolate from strong oxidizing agents and avoid contact with aluminum, copper, copper alloys and nickel.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

ENGINEERING CONTROLS: Under normal use conditions, special ventilation is usually not required; however, ensure that existing ventilation is sufficient to prevent the circulation and/or accumulation of dust in the air.

PERSONAL PROTECTIVE EQUIPMENT

EYES AND FACE: Wear dust-tight goggles when handling this product.

RESPIRATORY: For dust exposures, wear a NIOSH-approved half-mask, air-purifying respirator with dust, mist and fume filters to reduce the potential for inhalation exposure. When using respirator cartridges or canisters, they must be changed frequently (following each use or at the end of the work shift) to assure breakthrough exposure does not occur.

PROTECTIVE CLOTHING: Wear suitable protective clothing and footwear in accordance with use and exposure potential.

GLOVES: Wear gloves that are in accordance with use and exposure potential. Wash the outside of gloves with soap and water prior to removal. Inspect regularly for leaks.

WORK HYGIENIC PRACTICES: Clean water should be available for washing in case of eye or skin contamination. All food and smoking materials should be kept in a separate area away from the storage / use location. Eating, drinking and smoking should be prohibited in areas where there is a potential for significant exposure to this material. Wash skin prior to eating, drinking or using tobacco. Shower at the end of the workday.

COMMENTS:

EXPOSURE LIMITS:

Particulates Not Otherwise Classified (PNOC):

ACGIH / TWA: 10 mg/m³ (inhalable particulate); 3 mg/m³ (respirable particulate)

OSHA (PEL / TWA): 15 mg/m³ (total dust); 5 mg/m³ (resp fraction)

9. PHYSICAL AND CHEMICAL PROPERTIES

ODOR:	Odorless
APPEARANCE:	Yellow-green powder
AUTOIGNITION TEMPERATURE:	Not applicable
BOILING POINT:	Not applicable
COEFFICIENT OF OIL / WATER:	Not determined.
DENSITY / WEIGHT PER VOLUME:	(Bulk) ~ 650 kg/m ³
EVAPORATION RATE:	(Butyl Acetate = 1) Not determined
FLASH POINT:	Not applicable
MELTING POINT:	80°C (176°F) / crystal water loss
ODOR THRESHOLD:	Not determined.
PERCENT VOLATILE:	(% by weight) Not determined

pH:	~ 4.0 - 5.5 (1% solution)
SOLUBILITY IN WATER:	90 g/L (at 20°C / 68°F); 300 g/L (at 80°C / 176°F)
SPECIFIC GRAVITY:	(H ₂ O=1) Not determined
VAPOR DENSITY:	(Air = 1) Not determined
VAPOR PRESSURE:	Not applicable
VISCOSITY:	Not determined.

10. STABILITY AND REACTIVITY

STABILITY:	Stable at ambient temperatures and atmospheric pressures.
POLYMERIZATION:	Not expected under normal temperatures and pressure.
INCOMPATIBLE MATERIALS:	Aqueous solution in contact with aluminum evolves hydrogen. This product is incompatible with strong oxidizers. Avoid contact with aluminum, copper, copper alloys and nickel. Avoid prolonged storage at elevated temperatures.
HAZARDOUS DECOMPOSITION PRODUCTS:	Under fire conditions this product may support combustion and decomposes to give off carbon mon/dioxide fumes (CO, CO ₂) and nitrogen oxides. Decomposition Temperature: 180 ± 20°C (356 ± 36°F)
COMMENTS:	HAZARDOUS COMBUSTION PRODUCTS: Thermal decomposition products may release toxic and/or hazardous fumes and gases, including nitrogen oxides and carbon oxides.

11. TOXICOLOGICAL INFORMATION

EYE EFFECTS: Expected to be minimally irritating.

SKIN EFFECTS: Expected to be slightly irritating.

DERMAL LD₅₀: No data available.

ORAL LD₅₀: Similar product: > 2,000 mg/kg (rat)

INHALATION LC₅₀: No data available.

SENSITIZATION: No data available.

TARGET ORGANS: Eyes, skin

ACUTE EFFECTS FROM OVEREXPOSURE: This product has a low order of toxicity and is considered to be practically harmless by ingestion. Ferric sodium EDTA has shown slight transient conjunctivitis and corneal opacity in rabbits. No additional acute toxicological information is known.

CHRONIC EFFECTS FROM OVEREXPOSURE: Ingestion of up to 86.15 mg/kg/day of ferric sodium EDTA for 31 to 61 days by rats resulted in an accumulation of iron in the liver, spleen and kidneys. There were no abnormal necropsy or histopathology findings.

Ferric sodium EDTA, when tested as a pure substance, gave a negative response in the Ames Assay and the E. Coli bacterial reverse assay, but a positive response in the Mouse Lymphoma Assay (in vitro) with and without metabolic activation at concentrations which were cytotoxic. The positive response was attributed to a possible sensitivity of the cells to abnormal iron concentrations.

EDTA and its sodium salts have been reported, in some studies, to cause developmental toxicity in laboratory animals only at exaggerated doses that were toxic to the mother. These effects are likely associated with zinc deficiency due to chelation. Exposures having no effect on the zinc level of the mother, should have no effect on the fetus.

CARCINOGENICITY:

NTP:	Not listed
IARC:	Not listed
OSHA:	Not listed
OTHER:	Not Listed (ACGIH)

12. ECOLOGICAL INFORMATION

ENVIRONMENTAL DATA: Ferric sodium EDTA was biodegradable when evaluated using a mixed population of aerated bacteria. Ferric sodium EDTA component is not likely to bioaccumulate due to its high water solubility and a Log Pow equal to -10.6 (based on EPIWIN model).

ECOTOXICOLOGICAL INFORMATION: Ferric sodium EDTA showed low toxicity to fish (96-hour LC_{50} = 8100 mg/L for a 32% solution and 2592 mg/L for a 100% active), and moderate toxicity to algae (72-hour LC_{50} = 76.7 mg/L).

13. DISPOSAL CONSIDERATIONS

DISPOSAL METHOD: In its unused condition, this product is not considered to be a RCRA-defined hazardous waste by characteristics or listings. It is the responsibility of the waste generator to evaluate whether the waste is hazardous by characteristic or listing. Dispose as a hazardous waste in

accordance with local, state and federal regulatory agencies. NOTE: State and local regulations may be more stringent than federal regulations.

EMPTY CONTAINER: Containers which held this material should be triple-rinsed prior to disposal or return. Empty containers should be disposed of, or shipped, in accordance with all applicable laws and regulations.

14. TRANSPORT INFORMATION

U.S. DEPARTMENT OF TRANSPORTATION (DOT)

ADDITIONAL INFORMATION:

This material is not a hazardous material as defined by US Department of Transportation at 49 CFR Parts 100 through 185.

INTERNATIONAL MARITIME DANGEROUS GOODS (IMDG)

ADDITIONAL INFORMATION:

This material is not a dangerous good as defined by the International Maritime Dangerous Goods Code.

ADR - EUROPEAN AGREEMENT CONCERNING THE INTERNATIONAL CARRIAGE OF DANGEROUS GOODS BY ROAD

ADDITIONAL INFORMATION:

This material is not a dangerous good as defined by ADR.

INTERNATIONAL CIVIL AVIATION ORGANIZATION (ICAO) / INTERNATIONAL AIR TRANSPORT ASSOCIATION (IATA)

ADDITIONAL INFORMATION:

This material is not a dangerous good as defined in ICAO and the International Air Transport Association Dangerous Goods Regulations.

OTHER INFORMATION:

REQUIRED LABELS: No transport label required.

ENVIRONMENTALLY HAZARDOUS SUBSTANCES (49 CFR 172.101, Appendix A): None

15. REGULATORY INFORMATION

UNITED STATES

SARA TITLE III (SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT)

SECTION 302 EXTREMELY HAZARDOUS SUBSTANCES (40 CFR 355, APPENDIX A):

Not regulated

SECTION 312 THRESHOLD PLANNING QUANTITY (40 CFR 370):

The Threshold Planning Quantity (TPQ) for this product, if treated as a mixture, is 10,000 lbs; however, this product contains the following ingredients with a TPQ of less than 10,000 lbs.:

Not regulated

SECTION 313 REPORTABLE INGREDIENTS (40 CFR 372):

Not regulated

CERCLA (COMPREHENSIVE ENVIRONMENTAL RESPONSE COMPENSATION AND LIABILITY ACT)

CERCLA DESIGNATION & REPORTABLE QUANTITIES (RQ) (40 CFR 302.4):

Not regulated

TSCA (TOXIC SUBSTANCE CONTROL ACT)

TSCA INVENTORY STATUS (40 CFR 710):

Listed (components)

U.S. STATES

California Prop 65:

Not regulated

U.S. State Regulation:

Not regulated

CANADA

WHMIS (WORKPLACE HAZARDOUS MATERIALS INFORMATION SYSTEM):

Not a controlled product under the Canadian Workplace Hazardous Materials Information System (WHMIS).

Domestic Substance List:

Listed (components)

INTERNATIONAL LISTINGS

EDTA, ferric sodium

Australia (AICS): Listed

China: Listed

Japan (ENCS): (2)-1266
 Korea: KE-31512
 Philippines (PICCS): Listed

Water
 Australia (AICS): Listed
 China: Listed
 Korea: KE-35400
 Philippines (PICCS): Listed

16. OTHER INFORMATION

HMIS

Health	1
Flammability	1
Physical Hazard	0
Personal Protection (PPE)	None

No special requirements

HMIS = Hazardous Materials Identification System

Degree of Hazard Code:

4 = Severe
 3 = Serious
 2 = Moderate
 1 = Slight
 0 = Minimal

NFPA

Health	1
Flammability	0
Reactivity	0
Special	None

No special requirements

NFPA = National Fire Protection Association

Degree of Hazard Code:

4 = Extreme
 3 = High
 2 = Moderate
 1 = Slight
 0 = Insignificant

REVISION SUMMARY:

New MSDS.

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