

MATERIAL SAFETY DATA SHEET

Section 1: Product and Company Identification

Product name: METALfree
Chemical name: Versine Acid (EDTA) - Chelating Agent
Chemical family: Ethylenediaminetetraacetic Acid
Chemical formula: Tetrasodium Ethylenediaminetetraacetate
Product code(s): 07001
Manufacturer: Natural Chemistry, Inc.
USA: 76 Progress Drive, Stamford, CT 06902
CANADA: 17 Trent Drive, Campbellford, ON Canada K0L 1L0
Emergency phone: 800-753-1233
Fax number: 705-653-5445
Revision Date: 04/05/05

Section 2: Composition / Information on Ingredients

| CAS No. | Chemical Name | % wt. |
|-------------|---|-------|
| 000064-02-8 | Tetrasodium salt of ethylenediaminetetraacetic acid | 37% |
| 038011-25-5 | Disodium ethylenediaminediacetate | 1% |
| 019019-43-3 | Trisodium ethylenediaminetriacetate | 1% |
| 005064-31-3 | Trisodium nitrilotriacetate | 1% |
| 001310-73-2 | Sodium hydroxide | 1% |
| 002836-32-0 | Sodium glycolate | 1% |
| 007732-18-5 | Water | 56% |

(active ingredients calculated as tetrasodium ethylenediaminetetraacetate - 39%)

Section 3: Hazards Identification

EMERGENCY OVERVIEW

Light yellow liquid, Slight amine odor, Causes eye burns, Causes skin burns.

POTENTIAL HEALTH EFFECTS (See Section 11 for toxicological data)

Eye: May cause severe irritation with corneal injury which may result in permanent impairment of vision, even blindness. Mists may cause eye irritation.

Skin: Prolonged or repeated exposure may cause skin irritation, even a burn. May cause more severe response if confined to skin or skin is abraded (scratched or cut). Mists may irritate skin. Not classified as corrosive according to DOT. A single prolonged skin exposure is not likely to result in the material being absorbed through skin in harmful amounts.

Ingestion: Single dose oral toxicity is low. Small amounts swallowed incidental to normal handling operations are not likely to cause injury; swallowing larger amounts may cause injury. Ingestion may cause gastrointestinal irritation or ulceration. Ingestion may cause burns of the mouth and throat.

Inhalation: Single exposure to vapors is not expected to pose a hazard; vapors are primarily water. Mists may cause irritation of upper respiratory tract.

Systemic (Other Target Organ) Effects: No significant toxicologic effects were observed in laboratory animals fed the sodium salt of EDTA.

Cancer Information: This mixture contains a very small amount of trisodium salt of nitrilotriacetic acid (trisodium NTA, CAS#005064-31-3) which is listed as a potential carcinogen for hazard communication purposes under OSHA Standard 20 CFR 1910.1200. Components listed by IARC and NTP: trisodium nitrilotriacetate. Although large dietary doses of NTA have caused urinary tumors in laboratory animals, there is little likelihood that NTA could cause cancer in humans, especially at subtoxic doses. The trisodium salt of EDTA did not cause cancer in laboratory animals.

Teratology (Birth Defects): Birth defects are unlikely. EDTA and its sodium salts have been reported to cause birth defects 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 mother should have no effect on the fetus.

Reproductive Effects: Limited data in laboratory animals suggests that the material does not affect reproduction.

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Section 4: First Aid Measures

If in eyes: Immediate and continuous irrigation with flowing water for at least 30 minutes is imperative. Prompt medical consultation is essential.

If on skin: Wash off in flowing water or shower.

If swallowed: Do not induce vomiting. Give large amounts of water or milk if available and transport to medical facility. Do not give anything to an unconscious person.

If inhaled: Remove to fresh air if effects occur. Consult a physician.

Note to Physician: Eye irritation may be necessary for an extended period of time to remove as much caustic as possible. Duration of irritation and treatment is at the discretion of medical personnel. May cause tissue destruction leading to stricture. If lavage is performed, suggest endotracheal and/or esophagoscopy control. If burn is present, treat as any thermal burn, after decontamination. No specific antidote. Supportive care. Treatment based on judgement of the physician in response to reactions of the patient.

Section 5: Fire Fighting Measures

Flammable Properties

Flash Point: It has no measurable flashpoint.
Method Used: PMCC
Autoignition Temperature: Not applicable

Flammable Limits

LFL: Not applicable
UFL: Not applicable

Hazardous Combustion Products: Under fire conditions some components of this product may decompose. The smoke may contain unidentified toxic and/or irritating compounds. Hazardous combustion products may include and are limited to: Nitrogen oxides, Carbon monoxide, Ammonia, and Carbon dioxide.

Other Flammability Information: This material will not burn until the water has evaporated. Residue can burn.

Extinguishing Media: To extinguish combustible residues of this product use water fog, carbon dioxide, dry chemical, or foam.

Fire Fighting Instructions: Keep people away. Isolate fire area and deny unnecessary entry. To extinguish combustible residues of this product use water fog, carbon dioxide, dry chemical, or foam.

Protective Equipment for Fire Fighters: Wear positive-pressure, self-contained breathing apparatus (SCBA) and protective fire fighting clothing (includes fire fighting helmet, coat, pants, boots, and gloves). If protective equipment is not available or not used, fight fire from a protected location or safe distance.

Section 6: Accidental Release Measures (See Section 15 for Regulatory Information)

Protect People: Isolate area.

Protect the Environment: Prevent wash water entering natural waterways or public water supplies.

Clean up: Clean up residual with non-combustible absorbent material and wash with water.

Section 7: Handling and Storage

Handling: Containers of this material may be hazardous when emptied. Since emptied containers retain product residues (vapor, liquid, and/or solid), all hazard precautions given in the data sheet must be observed.

For more Storage and Handling Information refer to bulletin 113-1290-394 AMS.

Storage: Do not store in aluminum, carbon steel, copper, copper alloys, zinc or nickel containers. Store between 0 and 120F.

Section 8: Exposure Controls/Personal Protection

Engineering Controls: Good general ventilation should be sufficient for most conditions. Local exhaust ventilation may be necessary for some operations.

Personal Protective Equipment: Use chemical goggles. Eye wash fountain should be located in immediate work area.

Eye/Face Protection: Wear clean, long-sleeved, body-covering clothing. Use gloves impervious to this

Skin Protection: material. When prolonged or frequently repeated contact could occur, use protective clothing impervious to this material. Selection of specific items such as faceshield, gloves, boots, apron, or full-body suit will depend on operation.

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If hands are cut or scratched, use gloves impervious to this material even for brief exposures.

Respiratory Protection:
Exposure Guideline(s):

In misty atmospheres, use an approved mist respirator.
Sodium hydroxide: ACGIH TLV and OSHA PEL are 2 mg/m³ Ceiling. PELs are in accord with those recommended by OSHA, as in the 1989 revision of PELs.
Major component(s) of this material do not have exposure guidelines.

Section 9: Physical and Chemical Properties

Appearance/Physical State: light yellow liquid
Odor: slight amine
Vapor Pressure: same as water
Vapor Density: same as water
Boiling Point: 223F, 106C
Solubility in Water/Miscibility: completely miscible
Specific Gravity: 1.31 @ 25/25C
Freezing Point: -24F, -31C

Section 10: Stability and Reactivity

Chemical Stability: Stable under recommended storage conditions. See storage section.
Conditions to Avoid: None known.
Incompatibility with Other Material: Avoid contact with oxidizing materials. Avoid contact with metals, such as aluminum. Flammable hydrogen is formed in the presence of aluminum.
Hazardous Decomposition Products: Hazardous decomposition products depend upon temperature, air supply and the presence of other materials.
Hazardous Polymerization: Will not occur.

Section 11: Toxicological Information

(see Section 3 for Potential Health Effects. For detailed toxicological data, write or call the address or non-emergency number shown in Section 1)

Skin: The LD50 for skin absorption in rabbits is >5000 mg/kg.
Ingestion: The oral LD50 for male rats is 3030 mg/kg.
Mutagenicity: Most data indicate that EDTA and its salts are not mutagenic. Minimal effects reported are likely due to trace metal deficiencies resulting from chelation by EDTA.

Section 12: Ecological Information

(for detailed Ecological data, write or call the address or non-emergency number shown in Section 1)

Environmental Fate

Movement & Partitioning: Based largely or completely on information for similar materials (EDTA). Bioconcentration potential is low (BCF less than 100 or Log Pow less than 3).
Degradation & Persistence: Biodegradation under aerobic static laboratory conditions is below detectable limits in 20 days. Chemical or physical degradation is expected in the environment.
Degradation is expected in the soil environment. Theoretical oxygen demand (ThOD) is calculated to be 1.31 p/p.
Ecotoxicity: Material is practically non-toxic to fish on an acute basis (LC50 greater than 100 mg/L). Acute LC50 for fathead minnow (*Pimephales promelas*) is >100 mg/L. Acute LC50. LC50 for bluegill (*Lepomis macrochirus*) is 1030 mg/L.

Section 13: Disposal Considerations (See Section 15 for Regulatory Information)

Disposal: Do not dump into any sewers, on the ground, or into any body of water. All disposal methods must be in compliance with all Federal, State/Provincial and local laws and regulations. Regulations may vary in different locations. Waste characterability solely of the waste generator. The information presented here pertains only to the product as shipped in its intended condition as described in MSDS Section 2 (Composition/Information on Ingredients). For unused and uncontaminated product, the preferred options include sending to a licensed, permitted: recycler, reclaimer. For additional information refer to: Regulation Information, MSDS Section 15, and Stability & Reactivity Information, MSDS Section 10.

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Section 14: Transportation Information

Department of Transportation (Land D.O.T.): not regulated

Section 15: Regulatory Information (Not meant to be all-inclusive--selected regulations represented)

NOTICE: The information herein is presented in good faith and believed to be accurate as of the effective date shown above. However, no warranty, express or implied is given. Regulatory requirements are subject to change and may differ from one location to another; it is the buyer's responsibility to ensure that its activities comply with federal, state or provincial, and local laws. The following specific information is made for the purpose of complying with numerous federal, state or provincial and local laws and regulations. See other sections for health and safety information.

U.S. Regulations:

SARA 3131 Information: To the best of our knowledge, this product contains no chemical subject to SARA Title III Section 313 supplier notification requirements.

SARA Hazard Category: This product has been reviewed according to the EPA "Hazard Categories" promulgated under Sections 311 and 312 of the Super fund Amendment and Reauthorization Act of 1986 (SARA Title III) and is considered, under applicable definitions, to meet the following categories:
An immediate health hazard
A delayed health hazard

Toxic Substances Control Act (TSCA): All ingredients are on the TSCA inventory or are not required to be listed on the TSCA inventory.

State Right-to-know: The following product components are cited on certain state lists as mentioned. Non-listed components may be shown in the composition section of the MSDS.

| <u>Chemical Name</u> | <u>CAS#</u> | <u>List</u> |
|-----------------------------|---|-----------------|
| Formaldehyde | 000050-00-0 | PA2 |
| Sodium Hydroxide (Solution) | 001310-73-2 | NJ1 NJ3 PA1 PA3 |
| NJ1= | New Jersey Special Health Hazard Substance (present at greater than or equal to 0.1%). | |
| NJ3= | New Jersey Workplace Hazardous Substance (present at greater than or equal to 1.0%) | |
| PA1= | Pennsylvania Hazardous Substance (present at greater than or equal to 1.0%) | |
| PA2= | Pennsylvania Special Hazardous Substance (present at greater than or equal to 0.01%) | |
| PA3= | Pennsylvania Environmental Hazardous Substance (present at greater than or equal to 1.0%) | |

OSHA Hazard

Communication Standard: This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

Canadian Regulations:

WHMIS Information: The Canadian Workplace Hazardous Materials Information System (WHMIS) Classification for this product is:
D2A - untested mixture containing a material qualifying as D2A
D2B - eye or skin irritant
E - corrosive to metal and skin
refer elsewhere in the MSDS for specific warnings and safe handling information. Refer to the employer's workplace education program.

CPR Statement: This product has been classified in accordance with the hazard criteria of the Canadian Controlled Products Regulations (CPR) and the MSDS contains all the information required by the CPR.

Hazardous Products Act Information: This product contains the following ingredients which are Controlled Products and/or on the Ingredient Disclosure List (Canadian HPA section 13 and 14):

| <u>Components</u> | <u>CAS#</u> | <u>Amount (%w/w)</u> |
|---|-------------|----------------------|
| Tetrasodium salt of ethylenediaminetetraacetic acid | 000064-02-8 | 37% |
| Disodium ethylenediaminediacetate | 038011-25-5 | 1% |
| Trisodium ethylenediaminetriacetate | 019019-43-3 | 1% |
| Trisodium nitrilotriacetate | 005064-31-3 | 1% |
| Sodium hydroxide | 001310-73-2 | 1% |

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Section 16: Other Information

Hazard Rating System:

National Fire Protection Association (NFRA) Ratings: Health: 1; Flammability: 0; Reactivity: 0

MSDS Status: Revised Section 13.

MSDS Creation Date: 6/10/2002

Natural Chemistry, Inc. provides the information contained herein in good faith but makes no representation as to its comprehensiveness or accuracy. This document is intended only as a guide to the appropriate precautionary handling of the material by a properly trained person using this product. Individuals receiving the information must exercise their independent judgment in determining its appropriateness for a particular purpose. Natural Chemistry, Inc. makes no representations or warranties, either express or implied, including without limitation any warranties of merchantability, fitness for a particular purpose with respect to the information set forth herein or the product to which the information refers. Accordingly, Natural Chemistry, Inc. will not be responsible for damages resulting from use of or reliance upon this information.

MSDS are intended as a tool for hazard evaluation within the work place. Judgment should be exercised in extrapolating MSDS data to the community environment and to use as intended by the general public.

Authorized by: Robert Kulperger

Phone Number: 800-753-1233