Material Safety Data Sheet
Ethylenediaminetetraacetic acid, tetrasmium salt dihydrate

ACC# 76872

Section 1 - Chemical Product and Company Identification

MSDS Name: Ethylenediaminetetraacetic acid, tetrasmium salt dihydrate
Catalog Numbers: BP121-500, NC9167943, NC9228566, NC9383642, NC9612174, NC9612175, NC9621093, NC9891570, NC9915835, S657-3, S657-500, XXBP12110KG
Synonyms: Tetrasodium ethylenediaminetetraacetate dihydrate; Calso; Celon E; Versene; Tetrine; Sodium edetate dihydrate; Edetate sodium dihydrate; EDTA tetrasmium dihydrate.

Company Identification:
Fisher Scientific
1 Reagent Lane
Fair Lawn, NJ 07410
For Information, call: 201-796-7100
Emergency Number: 201-796-7100
For CHEMTREC assistance, call: 800-424-9300
For International CHEMTREC assistance, call: 703-527-3887

Section 2 - Composition, Information on Ingredients

<table>
<thead>
<tr>
<th>CAS#</th>
<th>Chemical Name</th>
<th>Percent</th>
<th>EINECS/ELINCS</th>
</tr>
</thead>
<tbody>
<tr>
<td>10378-23-1</td>
<td>Tetrasodium ethylenediaminetetraacetate dihydrate</td>
<td>&gt;99</td>
<td>unlisted</td>
</tr>
<tr>
<td>139-13-9</td>
<td>Nitrilotriacetic acid (NTA)</td>
<td>&lt;0.2</td>
<td>205-355-7</td>
</tr>
</tbody>
</table>

Section 3 - Hazards Identification

EMERGENCY OVERVIEW

Appearance: white powder.
Warning! Causes eye, skin, and respiratory tract irritation.
Target Organs: Eyes, skin, mucous membranes.

Potential Health Effects
Eye: Causes eye irritation.
Skin: Causes skin irritation.
Ingestion: May cause irritation of the digestive tract.
Inhalation: Causes respiratory tract irritation.
Chronic: Not available. This chemical is a sequestering agent; one gram complexes 215 mg of CaCO3. Overexposure to this chemical could cause hypocalcemia, the reduction of the blood calcium below normal. Symptoms include muscle and abdominal cramps, and hyperactive deep tendon reflexes. Chronic exposure to this chemical in pregnancy sufficient to result in calcium depletion might potentially harm the fetus. There is no evidence to
indicate that this has occurred with occupational exposure.

Section 4 - First Aid Measures

Eyes: In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Get medical aid.
Skin: In case of contact, flush skin with plenty of water. Remove contaminated clothing and shoes. Get medical aid if irritation develops and persists. Wash clothing before reuse.
Ingestion: If swallowed, do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Get medical aid.
Inhalation: If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical aid.
Notes to Physician: Treat symptomatically and supportively.

Section 5 - Fire Fighting Measures

General Information: As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear. Dusts at sufficient concentrations can form explosive mixtures with air.
Extinguishing Media: For small fires, use water spray, dry chemical, carbon dioxide or chemical foam.
Flash Point: Not applicable.
Autoignition Temperature: Not applicable.
Explosion Limits, Lower: Not available.
Upper: Not available.
NFPA Rating: (estimated) Health: 2; Flammability: 1; Instability: 0

Section 6 - Accidental Release Measures

General Information: Use proper personal protective equipment as indicated in Section 8.
Spills/Leaks: Vacuum or sweep up material and place into a suitable disposal container. Wear a self-contained breathing apparatus and appropriate personal protection. (See Exposure Controls, Personal Protection section). Avoid generating dusty conditions. Provide ventilation.

Section 7 - Handling and Storage

Handling: Wash thoroughly after handling. Remove contaminated clothing and wash before reuse. Use with adequate ventilation. Minimize dust generation and accumulation. Avoid contact with eyes, skin, and clothing. Keep container tightly closed. Avoid breathing dust.
Storage: Store in a cool, dry, well-ventilated area away from incompatible substances. Aqueous solutions cannot be stored in aluminum, carbon steel, copper, copper alloys, zinc or nickel containers.
Section 8 - Exposure Controls, Personal Protection

**Engineering Controls:** Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower. Use adequate ventilation to keep airborne concentrations low.

**Exposure Limits**

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>ACGIH</th>
<th>NIOSH</th>
<th>OSHA - Final PELs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tetrasodium ethylenediaminetetraacetic acid dihydrate</td>
<td>none listed</td>
<td>none listed</td>
<td>none listed</td>
</tr>
<tr>
<td>Nitriltriacetic acid (NTA)</td>
<td>none listed</td>
<td>none listed</td>
<td>none listed</td>
</tr>
<tr>
<td>Tetrasodium ethylenediaminetetraacetic anhydrous</td>
<td>none listed</td>
<td>none listed</td>
<td>none listed</td>
</tr>
</tbody>
</table>

**OSHA Vacated PELs:** Tetrasodium ethylenediaminetetraacetic acid dihydrate: No OSHA Vacated PELs are listed for this chemical. Nitriltriacetic acid (NTA): No OSHA Vacated PELs are listed for this chemical. Tetrasodium ethylenediaminetetraacetic anhydrous: No OSHA Vacated PELs are listed for this chemical.

**Personal Protective Equipment**

**Eyes:** Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.

**Skin:** Wear appropriate protective gloves to prevent skin exposure.

**Clothing:** Wear appropriate protective clothing to prevent skin exposure.

**Respirators:** Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

Section 9 - Physical and Chemical Properties

**Physical State:** Powder

**Appearance:** white

**Odor:** none reported

**pH:** 10.7-11.7 (1% soln)

**Vapor Pressure:** Not available.

**Vapor Density:** Not available.

**Evaporation Rate:** Not applicable.

**Viscosity:** Not available.

**Boiling Point:** Not applicable.

**Freezing/Melting Point:** > 300 deg C

**Decomposition Temperature:** > 400 deg C

**Solubility:** Soluble.

**Specific Gravity/Density:** Not available.

**Molecular Formula:** C10H12N2O8Na4.2H2O

**Molecular Weight:** 416.2

Section 10 - Stability and Reactivity
Chemical Stability: Stable at room temperature in closed containers under normal storage and handling conditions.
Conditions to Avoid: Dust generation, Corrosive to aluminum in aqueous solution..
Incompatibilities with Other Materials: Metals, strong oxidizing agents, strong acids.
Hazardous Decomposition Products: Nitrogen oxides, carbon monoxide, carbon dioxide, ammonia.
Hazardous Polymerization: Will not occur.

Section 11 - Toxicological Information

RTECS#:
CAS# 10378-23-1 unlisted.
CAS# 139-13-9: AJ0175000
CAS# 64-02-8: AH5075000
LD50/LC50:
Not available.

CAS# 139-13-9:
   Oral, mouse: LD50 = 3160 mg/kg;
   Oral, rat: LD50 = 1100 mg/kg;

CAS# 64-02-8:
   Draize test, rabbit, eye: 1900 ug;
   Draize test, rabbit, eye: 100 mg/24H Moderate;
   Draize test, rabbit, skin: 500 mg/24H Moderate;

Carcinogenicity:
CAS# 10378-23-1: Not listed by ACGIH, IARC, NTP, or CA Prop 65.
CAS# 139-13-9:
   - ACGIH: Not listed.
   - California: carcinogen, initial date 1/1/88
   - NTP: Suspect carcinogen
   - IARC: Group 2B carcinogen

CAS# 64-02-8: Not listed by ACGIH, IARC, NTP, or CA Prop 65.

Epidemiology: No information available.
Teratogenicity: EDTA and its sodium salts have been reported to cause birth defects in lab 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: Fertility: Post-implantation mortality, oral-rat TDLo=7632mg/kg.
Mutagenicity: Cytogenetic Analysis: intraperitoneal-mouse 50mmol/L. DNA Inhibition: hamster fibroblast 500ug/L, rabbit kidney 250umol/L.
Neurotoxicity: No information available.
Other Studies:
Section 12 - Ecological Information

**Ecotoxicity:** No data available. Catfish (tap water) 129 ppm/96H.
**Environmental:** Biological Oxygen Demand (BOD): 1%, 5 days.
**Physical:** No bioconcentration is expected because of the relatively high water solubility.
**Other:** None.

Section 13 - Disposal Considerations

Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. US EPA guidelines for the classification determination are listed in 40 CFR Parts 261.3. Additionally, waste generators must consult state and local hazardous waste regulations to ensure complete and accurate classification.
**RCRA P-Series:** None listed.
**RCRA U-Series:** None listed.

Section 14 - Transport Information

<table>
<thead>
<tr>
<th>Shipping Name:</th>
<th>US DOT</th>
<th>Canada TDG</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hazard Class:</td>
<td>Please contact Fisher Scientific for shipping information</td>
<td>No information available.</td>
</tr>
<tr>
<td>UN Number:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Packing Group:</td>
<td></td>
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</tr>
</tbody>
</table>

Section 15 - Regulatory Information

**US FEDERAL**

**TSCA**

CAS# 10378-23-1 is not on the TSCA Inventory because it is a hydrate. It is considered to be listed if the CAS number for the anhydrous form is on the inventory (40CFR720.3(u)(2)).

CAS# 139-13-9 is listed on the TSCA inventory.

CAS# 64-02-8 is listed on the TSCA inventory.

**Health & Safety Reporting List**

None of the chemicals are on the Health & Safety Reporting List.

**Chemical Test Rules**

None of the chemicals in this product are under a Chemical Test Rule.

**Section 12b**

None of the chemicals are listed under TSCA Section 12b.

**TSCA Significant New Use Rule**

None of the chemicals in this material have a SNUR under TSCA.

**CERCLA Hazardous Substances and corresponding RQs**

None of the chemicals in this material have an RQ.

**SARA Section 302 Extremely Hazardous Substances**
None of the chemicals in this product have a TPQ.

**SARA Codes**
- CAS # 139-13-9: delayed.
- CAS # 64-02-8: immediate.

**Section 313**
This material contains Nitrilotriacetic acid (NTA) (CAS# 139-13-9, <0.2%), which is subject to the reporting requirements of Section 313 of SARA Title III and

**Clean Air Act:**
- This material does not contain any hazardous air pollutants.
- This material does not contain any Class 1 Ozone depleters.
- This material does not contain any Class 2 Ozone depleters.

**Clean Water Act:**
- None of the chemicals in this product are listed as Hazardous Substances under the CWA.
- None of the chemicals in this product are listed as Priority Pollutants under the CWA.
- None of the chemicals in this product are listed as Toxic Pollutants under the CWA.

**OSHA:**
- None of the chemicals in this product are considered highly hazardous by OSHA.

**STATE**
- CAS# 10378-23-1 is not present on state lists from CA, PA, MN, MA, FL, or NJ.
- CAS# 139-13-9 can be found on the following state right to know lists: California, New Jersey, Pennsylvania, Minnesota, Massachusetts.
- CAS# 64-02-8 is not present on state lists from CA, PA, MN, MA, FL, or NJ.

**California Prop 65**
WARNING: This product contains Nitrilotriacetic acid (NTA), a chemical known to the state of California to cause cancer.
California No Significant Risk Level: CAS# 139-13-9: 100 ëg/day NSRL

**European/International Regulations**
**European Labeling in Accordance with EC Directives**

**Hazard Symbols:**
- XI

**Risk Phrases:**
- R 36/37/38 Irritating to eyes, respiratory system and skin.

**Safety Phrases:**
- S 26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
- S 37/39 Wear suitable gloves and eye/face protection.

**WGK (Water Danger/Protection)**
- CAS# 10378-23-1: No information available.
- CAS# 139-13-9: 2
- CAS# 64-02-8: 2

**Canada - DSL/NDSL**
- CAS# 139-13-9 is listed on Canada's DSL List.
- CAS# 64-02-8 is listed on Canada's DSL List.

**Canada - WHMIS**
- This product has a WHMIS classification of D2B.
- This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all of the information required by those regulations.

**Canadian Ingredient Disclosure List**
CAS# 139-13-9 is listed on the Canadian Ingredient Disclosure List.

Section 16 - Additional Information

MSDS Creation Date: 9/02/1997
Revision #8 Date: 6/29/2007

The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no event shall Fisher be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential or exemplary damages, howsoever arising, even if Fisher has been advised of the possibility of such damages.