

## 1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

<b>Product Name</b>	<b>Dissolvine® E-CA-3</b>
<b>Chemical Name</b>	Ethylenediaminetetraacetic acid, calcium disodium salt
<b>Synonym(s)</b>	Calcium disodium EDTA ; Sodium calcium edetate
<b>Product Use</b>	Chelating agent ; Plant nutrient
<b>Manufacturer / Supplier</b>	Akzo Nobel Functional Chemicals LLC Chelates Americas 525 West Van Buren St., Chicago, IL, USA 60607 Tel. 1-800-906-7979 <a href="http://www.dissolvine.com">www.dissolvine.com</a>

### Emergency Telephone Numbers

<b>CHEMICAL</b>	CHEMTREC	(800) 424-9300 (Toll-free in the U.S., Canada, and the U.S. Virgin Islands)
<b>EMERGENCY</b>		(24-hr) (703) 527-3887 (For calls originating elsewhere / collect calls are accepted)
<b>(Spill, Leak, Fire, Exposure or Accident)</b>	CANUTEC	(613) 996-6666 (Canada)
<b>MEDICAL / HANDLING EMERGENCIES</b>		(914) 693-6946 [AkzoNobel – USA]

## 2. HAZARDS IDENTIFICATION

<b>EMERGENCY OVERVIEW</b>	This material is not considered hazardous by the OSHA Hazard Communication Standard [29CFR 1910.1200]  <b>Contact with vapors may cause discomfort and/or mild irritation to eyes and respiratory tract.</b>
<b>Appearance and odor</b>	Clear to slightly hazy, yellow liquid with a faint musty odor.

### POTENTIAL HEALTH EFFECTS [See Section 11 for additional information]

<b>Primary Route(s) of Exposure</b>	Eye contact, skin contact and inhalation
<b>Acute Exposure</b>	
<b>Inhalation</b>	Exposure to an excessive concentration of vapors, mist, fumes or aerosols may cause respiratory tract discomfort and/or mild irritation.
<b>Skin Contact</b>	Essentially non-irritating to skin.
<b>Eye Contact</b>	Eye contact may cause mild irritation.
<b>Ingestion</b>	This product is expected to have a low order of acute toxicity.
<b>Carcinogenicity</b>	IARC, NTP, ACGIH and OSHA do not classify this material (and/or its components) as a carcinogen or suspect carcinogen.
<b>Reproduction</b>	EDTA and its sodium salts caused birth defects in some animal studies in the presence of maternal toxicity.
<b>Medical conditions aggravated by exposure</b>	Zinc deficiency may be aggravated by systemic exposure to EDTA and its sodium salts.

### POTENTIAL ENVIRONMENTAL EFFECTS [See Section 12 for additional information]

<b>Aquatic Toxicity</b>	This product is not expected to be harmful to aquatic life, based on available data.
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### 3. COMPOSITION / INFORMATION ON INGREDIENTS

INGREDIENTS	CAS Number	% (w/w)
Calcium disodium EDTA	62-33-9	27-29
Disodium EDTA	139-33-3	0.2-2.0
Water	7732-18-5	Balance

### 4. FIRST AID MEASURES

<b>General Information</b>	Although this product is not considered a hazardous material, the following measures are generally recommended following human exposure to chemical products.
<b>Inhalation</b>	No adverse effects anticipated. If necessary, remove victim to fresh air and loosen clothing. Get medical attention.
<b>Skin Contact</b>	No special measures required. Wash all affected areas with soap and plenty of water. Get medical attention if irritation occurs or persists.
<b>Eye Contact</b>	Flush eyes with large quantities of running water. If the victim is wearing contact lenses, remove them. Hold the eyelids apart during the flushing to ensure rinsing of the entire surface of the eye and lids with water. Get medical attention if eye irritation occurs or persists.
<b>Ingestion</b>	ONLY induce vomiting at the instructions of a physician. If victim is conscious, rinse mouth and give water to drink. Never give anything by mouth to an unconscious person. Get medical attention if health effects occur.
<b>Note to Physician</b>	Attending physician should treat exposed patients symptomatically.

### 5. FIRE FIGHTING MEASURES

<b>Flammable Properties</b>	Not flammable or combustible
<b>Extinguishing Media</b>	Use water fog or spray, dry chemical, foam or carbon dioxide extinguishing agents.
<b>Fire Fighting Procedures</b>	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.
<b>Fire &amp; Explosion Hazards</b>	This product is not defined as flammable or combustible and should not be a fire hazard. Under fire conditions, it does not contribute any unusual hazards.
<b>Hazardous Combustion Products</b>	Thermal decomposition products may release toxic and/or hazardous fumes and gases, including nitrogen oxides, carbon oxides, sodium hydroxide and calcium hydroxide.

### 6. ACCIDENTAL RELEASE MEASURES

<b>Personal Precautions</b>	All personnel involved in spill cleanup should avoid skin and eye contact by wearing appropriate personal protective equipment (See Section 8).
<b>Methods for Containment</b>	Safely stop source of spill. Dike area to prevent spill from spreading. Restrict non-essential personnel from area.
<b>Environmental Precautions</b>	Collect as much as possible in a clean container for reuse (if not contaminated) or disposal (if contaminated).
<b>Methods for Clean-up</b>	Soak up liquid residue with a suitable absorbent such as clay, sawdust or kitty litter. Sweep up absorbed material and place in a chemical waste container for disposal. Then flush area with water. CAUTION – The spill area may be slippery.
<b>Other Information</b>	See also Section 13 for disposal information.

## 7. HANDLING AND STORAGE

<b>Handling</b>	Avoid inhalation of vapors or fumes as well as prolonged and/or repeated skin and eye contact.
<b>Storage</b>	Keep containers closed and dry. This material is suitable for any general chemical storage area. Isolate from incompatible materials such as strong oxidizing agents. Store in PVC, PE, stainless steel or bituminized tanks. Avoid contact with aluminum, copper, copper alloys, nickel and zinc.
<b>Recommended Storage Temperature</b>	Store in original packing and in a cool and dry place at ambient temperature (below 77°F / 25°C). Do not store below 32°F (0°C) as product will freeze or phase will separate.
<b>General Comments</b>	Containers should not be opened until ready for use. Opened containers must be closed again properly. It is advised to re-test the product after two years of storage.

## 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

<b>Exposure Guidelines</b>	There are no known exposure limits applicable to this product or its components.
<b>Engineering Controls &amp; Ventilation</b>	Special ventilation is usually not required under normal use conditions. Ensure that existing ventilation is sufficient to prevent the circulation and/or accumulation of vapors in the air.
<b>Personal Protective Equipment (PPE)</b>	
<b>Skin</b>	Skin contact with the product should be minimized or prevented through the use of suitable protective clothing, gloves and footwear selected according to use condition exposure potential. For permanent (>8 hours) full contact use, 100% nitrile gloves are recommended.
<b>Eyes/Face</b>	If the possibility of splashing or spraying of this material exists, chemical goggles and/or a full-face shield should be worn when handling this product.
<b>Respiratory</b>	Use of respiratory protection is generally not required. However, if use conditions generate vapor, mist or aerosol and adequate ventilation (e.g., outdoor or well-ventilated area) is not available, use a NIOSH-approved organic vapor respirator with dust, mist and fume filters to reduce potential for inhalation exposure. Where exposure potential necessitates a higher level of protection, use a NIOSH-approved, positive-pressure/pressure-demand, air-supplied respirator. 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.
<b>Hygiene Measures</b>	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. Before eating, drinking and smoking, hands and face should be thoroughly washed.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

<b>Appearance</b>	
<b>Form</b>	clear to slightly hazy liquid
<b>Color</b>	yellow
<b>Odor</b>	faint musty odor
<b>Boiling Point</b>	213.8°F (101°C)
<b>Bulk Density</b>	not applicable
<b>Evaporation Rate</b> (Butyl Acetate=1)	not determined
<b>Melting Point</b>	32°F (0°C)
<b>Odor Threshold</b>	not determined
<b>pH</b>	8.0 – 9.0 (1% solution)

## 9. PHYSICAL AND CHEMICAL PROPERTIES (CONTINUED)

<b>Partition Coefficient</b> ( <i>n</i> -octanol/water)	not determined
<b>Solubility in water</b>	miscible
<b>Solubility in other solvents</b>	not determined
<b>Specific Gravity</b>	~ 1.22 g/ml
<b>Vapor Density</b> ( <i>Air</i> = 1)	same as water
<b>Vapor Pressure</b>	same as water
<b>Viscosity</b>	not determined
<b>Volatiles</b> (% by weight)	not determined
<b>Other</b>	not determined
<b>Flammability</b>	not flammable or combustible
<b>Flash Point</b> (Method)	not applicable
<b>Upper Flammable Limit</b> (% by volume)	not applicable
<b>Lower Flammable Limit</b> (% by volume)	not applicable
<b>Auto-Ignition Temperature</b>	not determined

< : less than    > : greater than    ~ : approximately

## 10. STABILITY AND REACTIVITY

<b>Chemical Stability</b>	This product is stable under recommended storage and handling conditions (see section 7). It is not self-reactive and is not sensitive to physical impact.
<b>Conditions to Avoid</b>	Avoid contact with aluminum, nickel, zinc, copper and copper alloys. Avoid prolonged storage at elevated temperatures. Aqueous solution in contact with aluminum evolves hydrogen.
<b>Incompatible Materials</b>	This product is incompatible with strong oxidizers.
<b>Hazardous Decomposition Products</b>	Thermal decomposition products may release toxic and/or hazardous fumes and gases, including nitrogen oxides, carbon oxides, sodium hydroxide and calcium hydroxide.
<b>Possibility of Hazardous Reactions</b>	Hazardous polymerization is not expected to occur under normal temperatures and pressures.

## 11. TOXICOLOGICAL INFORMATION

<b>General Information</b>	There is no experimental toxicological data on the product as such (Calcium-disodium EDTA). From structurally related products, the following may be expected:
<b>Acute Toxicity</b> (Oral / Dermal / Inhalation)	<b>Ferric-sodium EDTA complex</b> <ul style="list-style-type: none"><li>• Oral LD<sub>50</sub> &gt; 2 000 mg/kg (rat) for a 10% solution.</li><li>• Dermal LD<sub>50</sub> &gt; 2 000 mg/kg.</li><li>• Inhalation LC<sub>50</sub> &gt; 2.75 mg/kg (4-hr exposure in rats).</li></ul>
<b>Irritation</b> (Skin/Eyes/Respiratory Tract)	This product is not expected to be irritating to skin, eyes and respiratory tract, based on tests with similar products.
<b>Sensitization</b>	Ferric-sodium EDTA is not sensitizing (per OECD 429).
<b>Chronic Toxicity</b> (Oral / Dermal / Inhalation)	Ferric-sodium EDTA showed no adverse effects in various chronic ingestion toxicity tests in rats and dogs, with test duration ranging from 31 days to 2 years. NOAEL ≥ 84 mg/kg.
<b>Mutagenicity</b>	Ferric-sodium EDTA was not genotoxic in the Ames Test and the Micronucleus Test (per OECD 471 & 487).

## 11. TOXICOLOGICAL INFORMATION (CONTINUED)

<b>Reproductive Toxicity</b>	NOAEL (for reproduction) = 500 mg/kg (extended OECD 422) based on “read-across” test data with Manganese-disodium EDTA.
<b>Neurotoxicity</b>	NOAEL ≥ 1500 mg/kg (extended OECD 422) based on “read-across” test data with Manganese-disodium EDTA.
<b>Carcinogenicity</b>	IARC, NTP, ACGIH and OSHA do not classify this material as a carcinogen or suspect carcinogen.
<b>Other Effects</b>	None known.
<b>Target Organs</b>	Eyes.

## 12. ECOLOGICAL INFORMATION

<b>Ecotoxicity</b>	<b>Calcium-disodium EDTA</b> 35-Day NOEC (zebra fish) = 28.9 mg/L.  <b>Ferric-sodium EDTA</b> Fish (rainbow trout): 96-h LC <sub>50</sub> > 100 mg/L Daphnia magna: 48-h EC <sub>50</sub> = 100.9 mg/L ; 21-day NOEC = 31 mg/L Algae ( <i>pseudokirchnerella subcapita</i> ): 72-h NOEC = 69.9 mg/L Bacteria: 3-h NOEC = 640 mg/L
<b>Biodegradation</b>	EDTA (acid form) and its salts are not readily biodegradable. Under special conditions like adaptation or slightly alkaline pH, which is realistic under environmental surface water conditions, the biodegradability of EDTA is considered enhanced and, as such, EDTA is considered ultimately biodegradable.
<b>Chemical Fate</b>	The substance is not expected to enter the atmosphere significantly due to its high water solubility.
<b>Bioaccumulation</b>	Bioaccumulation is not expected due to the substance's high water solubility [Log K <sub>ow</sub> < 3].
<b>Other Information</b>	None available.

## 13. DISPOSAL CONSIDERATIONS

<b>Waste Disposal</b>	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 his wastes are hazardous by characteristic or listing. Dispose in accordance with all local, state and federal regulations. NOTE – State and local regulations may be more stringent than federal regulations.
<b>Container Disposal</b>	Containers should be cleaned of residual product before disposal or return. Since emptied containers retain product residue, follow label warnings even after container is emptied. Empty containers should be disposed of or shipped in accordance with all applicable laws and regulations.

## 14. TRANSPORT INFORMATION

<b>Shipping Information</b>	Not regulated for transport
<b>Emergency Response Guidebook (2008 ERG)</b>	Not applicable
<b>Environmentally Hazardous Substances</b> [49 CFR 172.101, Appendix A]	None



## 15. REGULATORY INFORMATION

### Regulatory Lists:

Substance Name	CAA	CERCLA	IARC	US State Right-To-Know Lists	CA Prop 65	SARA
Calcium disodium EDTA	N/R	N/R	N/R	N/R	N/R	N/R
Disodium EDTA	N/R	N/R	N/R	N/R	N/R	N/R
Water	N/R	N/R	N/R	N/R	N/R	N/R

### National Chemical Inventories Status:

Substance Name	US TSCA	Canada		EU EINECS	Australia AICS	New Zealand NZIoC	Japan ENCS	Korea KECI	Philippines PICCS	China IECSC
		DSL	NDSL							
Calcium disodium EDTA	X	X		X	X	X	X	X	X	X
Disodium EDTA	X	X		X	X	X	X	X	X	X
Water	X	X		X	X	X	X	X	X	X

**CANADA – WHMIS**  
(Workplace Hazardous  
Materials Information System)

**Not controlled**  
This product has been classified in accordance with the hazard criteria of the *Controlled Products Regulations* (CPR) and the MSDS contains all the information required by the CPR.

**Other Regulatory Information**

None available.

## 16. OTHER INFORMATION

**HMIS Hazard Rating** Health: 1 / Flammability: 0 / Physical Hazard: 0 / Other: none  
[0 – Minimal / 1 – Slight / 2 – Moderate / 3 – High / 4 – Extreme / \* - Chronic Health Hazard (see Section 11)]

**NFPA Hazard Rating** Health: 1 / Fire: 0 / Instability: 0 / Other: None  
[0 – Minimal / 1 – Slight / 2 – Moderate / 3 – High / 4 – Extreme]

**Trademark** Dissolvine® is a registered trademark of Akzo Nobel Chemicals B.V.

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**Changes** Sections 1, 2, 8, 11, 12, 16

**Prepared by** Akzo Nobel Services Inc. (Regulatory Affairs Americas, HSE Dept.)

**Technical Information Contact** Akzo Nobel Functional Chemicals, Chelates Americas, 1-800-906-7979

### Legend / Acronyms

ACGIH	American Conference of Governmental Industrial Hygienists
AICS	Australian Inventory of Chemical Substances
CA LIST	California Directors List of Hazardous Substances
CA PROP 65	California Proposition 65
CAA	Clean Air Act, Section 112
CERCLA	CERCLA Hazardous Substances
DSL	Domestic Substances List – Canada
EINECS	European Inventory of Existing Commercial Chemical Substances
HMIS	Hazardous Materials Identification System
IARC	International Agency for Research on Cancer – Carcinogens – Groups 1, 2A or 2B
IECSC	China – Inventory of Existing Chemical Substances
IL LIST	Illinois Toxic Substances Disclosure to Employees Act
KECI	Korea Existing Chemicals Inventory
LA LIST	Louisiana Right-to-Know Reporting List



## **16. OTHER INFORMATION (CONTINUED)**

<b>MA LIST</b>	Massachusetts R-T-K Substance List
<b>MN LIST</b>	Minnesota Hazardous Substance List
<b>NDSL</b>	Non-Domestic Substances List – Canada
<b>NFPA</b>	National Fire Protection Association
<b>NJ R-T-K</b>	New Jersey R-T-K Hazard List
<b>NOAEL</b>	No Observed Adverse Effect Level
<b>NOEC</b>	No Observed Effect Concentration
<b>N/R</b>	Non Regulated
<b>NTP</b>	National Toxicology Program - USA
<b>NZIoC</b>	New Zealand Inventory of Chemicals
<b>OSHA</b>	Occupational Safety & Health Administration
<b>PA LIST</b>	Pennsylvania Hazardous Substance List
<b>PICCS</b>	Philippines Inventory of Chemicals and Chemical Substances
<b>RI LIST</b>	Rhode Island – Hazardous Substance List
<b>SARA</b>	SARA Title III, Section 302 / 313
<b>TSCA</b>	Toxic Substances Control Act – USA
<b>X</b>	Listed and/or Regulated

### **Disclaimer**

The information in this Material Safety Data Sheet should be provided to all who will use, handle, store, transport or otherwise be exposed to this product. The user must determine the appropriate measures that need to be implemented for the use and handling of this product in the context of the user's operations and use of this product. The information contained herein supersedes all previously issued bulletins on the subject matter covered. If the date on this document is more than three years old, call to make certain that this sheet is current. No warranty is made as to the product's merchantability or fitness for any particular purpose, or that any suggested use will not infringe any patent. User must determine for himself, by preliminary tests or otherwise, the suitability of this product for his purposes, including mixing with other products. Nothing contained herein shall be construed as granting or extending any license under any patent.

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