

## 1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

<b>Product Name</b>	<b>Solvitar™</b>
<b>Chemical Name</b>	Ethylenediaminetetraacetic acid, calcium disodium complex
<b>Synonym(s)</b>	Calcium disodium EDTA ; Sodium calcium edetate
<b>Product Use</b>	Food additive
	<b>Use of this product in any food, medicinal and/or drug application must follow FDA-approved uses only.</b> <b>Meets the chemical test requirements of USP, EP, FCC, JECFA and European Directive 2008/84/EC.</b>
<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

### Emergency Telephone Numbers

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

## 2. HAZARDS IDENTIFICATION

<b>EMERGENCY OVERVIEW</b>	This material is not considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200) and Canada's WHMIS.  <b>Contact with dust may cause discomfort and/or mild irritation to eyes and respiratory tract.</b> <b>In certain concentrations, this product may form an explosive dust-air mixture.</b>
<b>Appearance and odor</b>	Odorless white free-flowing micro-granules.

### **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 dust may cause respiratory tract discomfort and/or mild irritation. <b>Skin Contact:</b> Skin contact is not expected to cause irritation. <b>Eye Contact:</b> Eye contact with dust may cause mild physical 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 list this material (and/or its components) as a carcinogen or suspect carcinogen.
<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	88 – 93
Water	7732-18-5	balance

The anhydrous substance (CAS # 62-33-9) covers all hydrated forms of this product [such as the commercially available dihydrate substance, CAS # 23411-34-9].

### 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>	Dust may be irritating to the respiratory tract and cause symptoms of bronchitis. Remove victim to fresh air. If irritation occurs or if breathing becomes difficult, get medical attention.
<b>Skin Contact</b>	Remove contaminated clothing, shoes and equipment. Wash all affected areas with soap and plenty of water. Wash contaminated clothing and shoes before reuse. Get medical attention if irritation occurs or persists.
<b>Eye Contact</b>	Flush eyes with large quantities of running water for a minimum of 15 minutes. 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.
<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>	Although this product is not defined as flammable or combustible, potential for dust explosion may exist. Depending upon conditions, dust may be sensitive to static discharge. Avoid possibility of dry powder and friction causing static electricity in presence of flammable materials (See NFPA-77, Chap.6).
<b>Hazardous Combustion Products</b>	Thermal decomposition products may release toxic and/or hazardous fumes and gases, including nitrogen oxides and carbon oxides.

### 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. 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).

## 6. ACCIDENTAL RELEASE MEASURES (CONTINUED)

- Methods for Clean-up** Sweep up spilled solid material, being careful not to create dust. Return sweepings to stock or, if contaminated, place into a chemical waste container for disposal according to local, state or federal regulations. Flush remainder with water.
- Other Information** See also Section 13 for disposal information.

## 7. HANDLING AND STORAGE

- Handling** Avoid inhalation as well as prolonged and/or repeated skin and eye contact. Minimize generation of dust.
- Storage** Store in original packaging in a cool and dry place. Keep containers closed and dry. This material is suitable for any general chemical storage area.
- Recommended Storage Temperature** Ambient temperature.
- General Comments** Protect product from moisture and wet air. 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 three years of storage.

## 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

- Exposure Guidelines** There are no known exposure limits applicable to this product or its components. Exposure to this product should be controlled below limits established for "Particulates Not Otherwise Classified/Regulated (PNOC/PNOR)":  
OSHA PEL-TWA: 15 mg/m<sup>3</sup> (total dust) ; 5 mg/m<sup>3</sup> (respirable fraction)  
[Ref: ACGIH Guide to Occupational Exposure Values, 2012 Edition]  
OSHA: Occupational Safety and Health Administration  
PEL: Permissible Exposure Limit  
TWA: Time-Weighted Average
- Engineering Controls & Ventilation** Special ventilation is usually not required under normal use conditions. Ensure that existing ventilation is sufficient to prevent the circulation and/or accumulation of dust in the air.
- Personal Protective Equipment (PPE)**  
**Skin:** 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.  
**Eyes/Face:** Dust-tight goggles should be worn when handling this product.  
**Respiratory:** Use of respiratory protection is generally not required. However, if use conditions generate dust 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. 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.
- Hygiene Measures** 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

- Appearance**
- Form** free-flowing micro-granules
- Color** white
- Odor** odorless



## 9. PHYSICAL AND CHEMICAL PROPERTIES (CONTINUED)

<b>Boiling Point</b>	not applicable
<b>Bulk Density</b>	600-800 kg/m <sup>3</sup> (untapped / poured)
<b>Evaporation Rate</b> (Butyl Acetate=1)	not determined
<b>Melting Point</b>	decomposes prior to melting
<b>Odor Threshold</b>	not determined
<b>pH</b>	6.5 – 7.5 (1% solution)
<b>Partition Coefficient</b> (n-octanol/water)	Log P <sub>ow</sub> < 0
<b>Solubility in water</b>	~ 800 g/L (at 20°C / 68°F) ; > 1500 g/L (at 80°C / 176°F)
<b>Solubility in other solvents</b>	practically insoluble in alcohol
<b>Specific Gravity</b>	not determined
<b>Vapor Density</b> (Air = 1)	not determined
<b>Vapor Pressure</b>	not applicable
<b>Viscosity</b>	not determined
<b>Volatiles</b> (% by weight)	not determined
<b>Other</b>	none known
<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>Lower Explosion Limit</b>	≥ 40 g/m <sup>3</sup>
<b>Auto-Ignition Temperature</b>	>200°C (> 392°F) / glowing temperature of 5 mm product layer

< : less than    > : greater than    ≥ : greater than or equal to    ~ : 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 prolonged storage at elevated temperatures. Product layer on hot surface might cause glowing or autoignition.
<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 and carbon oxides.
<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/L (4-hr exposure in rats).</li></ul>

## 11. TOXICOLOGICAL INFORMATION (CONTINUED)

<b>Irritation</b> (Skin / Eyes / Respiratory)	It is not considered to be irritating to skin based on tests with structurally related products. This product may be minimally irritating to eyes based on tests with similar products. Inhalation of dust may cause discomfort and/or irritation of the respiratory system.
<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>Sensitization</b>	Ferric-sodium EDTA is not sensitizing (per OECD 429).
<b>Carcinogenicity</b>	IARC, NTP, ACGIH and OSHA do not list this material as a carcinogen or suspect carcinogen.
<b>Mutagenicity</b>	Ferric-sodium EDTA was not genotoxic in the Ames Test and the Micronucleus Test (per OECD 471 & 487).
<b>Teratogenicity / 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>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>Related Product: 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 (2012 ERG)</b>	Not applicable
<b>Environmentally Hazardous Substances</b> [49 CFR 172.101, Appendix A]	None

## 15. REGULATORY INFORMATION

**National Chemical Inventories** NOTE: For inventory reporting purposes, listing of the anhydrous Calcium disodium EDTA under CAS # 62-33-9 covers all hydrated forms of this product such as the commercially available dihydrate substance (CAS # 23411-34-9).

<b>USA (TSCA)</b>	All components are on the TSCA Inventory.
<b>Canada (DSL/NDSL)</b>	All components are on the DSL Inventory.
<b>EU (EINECS)</b>	All components are on the EINECS / ELINCS Inventory.
<b>Australia (AICS)</b>	All components are on the AICS Inventory.
<b>China (IECSC)</b>	All components are on the IECSC Inventory.
<b>Japan (ENCS)</b>	All components are on the ENCS Inventory.
<b>Korea (KECI)</b>	All components are on the KECI Inventory.
<b>New Zealand (NZIoC)</b>	All components are on the NZIoC Inventory.
<b>Philippines (PICCS)</b>	All components are on the PICCS Inventory.

### Regulatory Lists

<b>SARA (USA)</b>	Contains no substance reportable under SARA (302 & 313).
<b>CA PROP 65 (USA)</b>	Contains no substance known to the State of California to cause cancer, birth defect or other reproductive harm.
<b>CERCLA (USA)</b>	Contains no substance at or above the reporting threshold under CERCLA.
<b>US State Right-To-Know (RTK)</b>	Contains no substance at or above the reporting threshold under the various State R-T-K regulations.
<b>Canada SNAc List</b>	This product does not contain any component regulated under the Significant New Activity (SNAc) provisions of CEPA'99 from Environment Canada.

### CANADA – WHMIS

#### Not controlled

(Workplace Hazardous Materials Information System)

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

The Cosmetic Ingredient Review (CIR) Expert Panel determined that EDTA and its salts are safe as used in cosmetic formulations.

Contact AkzoNobel for additional information regarding the use and approval of Calcium Disodium EDTA as an indirect food additive. This product is safe to use when added directly to certain designated foods in accordance with FDA Regulations, 21CFR §172.120.

## 16. OTHER INFORMATION

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

## 16. OTHER INFORMATION (CONTINUED)

<b>NFPA Hazard Rating</b>	<b>Health: 1 / Fire: 1 / Instability: 0 / Other: None</b> [0 – Minimal / 1 – Slight / 2 – Moderate / 3 – High / 4 – Extreme]
<b>Trademark</b>	Solvitar™ is a trademark of Akzo Nobel Chemicals B.V.
<b>Date of Issue / Revision</b>	August 22, 2013
<b>Revision #</b>	0.0
<b>Changes</b>	New Issue.
<b>Prepared by</b>	Akzo Nobel Services Inc. (HSE Dept., Regulatory Affairs Americas)
<b>Technical Information Contact</b>	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
CAA	Clean Air Act, Section 112
CERCLA	CERCLA Hazardous Substances
DSL	Domestic Substances List (Canada)
EINECS	European Inventory of Existing Commercial Chemical Substances
ENCS	Japan Existing and New Chemical Substances
EP	European Pharmacopeia (7 <sup>th</sup> Ed.)
FCC	Food Chemicals Codex (7 <sup>th</sup> Ed.)
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
JECFA	Joint (FAO/WHO) Expert Committee on Food Additives (2006)
KECI	Korea Existing Chemicals Inventory
MA LIST	Massachusetts R-T-K Substance List
MN LIST	Minnesota Hazardous Substance List
NDSL	Non-Domestic Substances List (Canada)
NFPA	National Fire Protection Association
NJ R-T-K	New Jersey R-T-K Hazard List
NOAEL	No Observed Adverse Effect Level
NOEC	No Observed Effect Concentration
NTP	National Toxicology Program - USA
NZIoC	New Zealand Inventory of Chemicals
OSHA	Occupational Safety & Health Administration
PA LIST	Pennsylvania Hazardous Substance List
PICCS	Philippines Inventory of Chemicals and Chemical Substances
SARA	SARA Title III, Section 302 / 313
TSCA	Toxic Substances Control Act – USA
USP	United States Pharmacopeia (Ed. 31, NF26)
WHMIS	Workplace Hazardous Materials Information System (Canada)

### 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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