

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Name	Dissolvine® E-MG-6
Chemical Name	Ethylenediaminetetraacetic acid, magnesium disodium complex
Synonym(s)	Magnesium disodium EDTA
Product Use	Chelating agent ; Plant nutrient
Manufacturer / Supplier	Akzo Nobel Functional Chemicals LLC Chelates Americas 525 West Van Buren St., Chicago, IL, USA 60607 Tel. 1-800-906-7979 www.dissolvine.com // www.akzonobel.com/micronutrients

Emergency Telephone Numbers

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

2. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW	This material is considered hazardous by the OSHA Hazard Communication Standard. [29 CFR 1910.1200]
WARNING !	<ul style="list-style-type: none">▪ Contains an impurity that may cause kidney damage and cancer in laboratory animals.▪ In certain concentrations, this product may form an explosive dust-air mixture.
Appearance and odor	Odorless white micro-granules.

POTENTIAL HEALTH EFFECTS [See Section 11 for additional information]

Primary Route(s) of Exposure	Eye contact, skin contact and inhalation
Acute Exposure	Inhalation: Inhalation of dust may cause discomfort and/or irritation of the respiratory system. Skin Contact: This product is not irritating to rabbit skin. Eye Contact: This product may cause mild physical irritation. Ingestion: This product is expected to have a low order of acute toxicity.
Carcinogenicity	Nitritotriacetic acid (NTA) and its salts were determined to be "possibly carcinogenic to humans" (Group 2B) by IARC, a compound which "may reasonably be anticipated to be a human carcinogen" by NTP and a "select carcinogen" by OSHA.
Chronic Effects	EDTA and its sodium salts caused birth defects in some animal studies in the presence of maternal toxicity.
Medical Conditions Aggravated by Exposure	Zinc deficiency may be aggravated by systemic exposure to EDTA and its sodium salts.

POTENTIAL ENVIRONMENTAL EFFECTS [See Section 12 for additional information]

Aquatic Toxicity	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)
Magnesium disodium EDTA	14402-88-1	88 – 95
Disodium EDTA	139-33-3	0.5 – 1.2
Nitrilotriacetic acid, trisodium salt	5064-31-3	0.1 – 0.3
Water	7732-18-5	Balance

4. FIRST AID MEASURES

- Inhalation** Dust may be irritating to the respiratory tract and cause symptoms of bronchitis. Move to fresh air. If symptoms persist, seek medical advice.
- Skin Contact** 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.
- Eye Contact** 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.
- Ingestion** 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.
- Note to Physician** Attending physician should treat exposed patients symptomatically.

5. FIRE FIGHTING MEASURES

- Flammable Properties** Not flammable or combustible
- Extinguishing Media** Use water fog or spray, dry chemical, foam or carbon dioxide extinguishing agents.
- 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.
- Fire & Explosion Hazards** 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. However, potential for dust explosion may exist. Depending upon conditions, dusts may be sensitive to static discharge. Avoid possibility of dry powder with friction causing static electricity in presence of flammables. (See NFPA-77, Chap. 6).
- Hazardous Combustion Products** Thermal decomposition products may release toxic and/or hazardous fumes and gases, including nitrogen oxides, carbon oxides and metal oxide fumes.

6. ACCIDENTAL RELEASE MEASURES

- Personal Precautions** All personnel involved in spill cleanup should avoid skin and eye contact by wearing appropriate personal protective equipment (See Section 8).
- Methods for Containment** Safely stop source of spill and prevent spill from spreading. Restrict non-essential personnel from area.
- Environmental Precautions** 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 and/or federal regulations. Flush remainder with water, absorb wastewater with e.g. vermiculite and dispose according to regulations.
Other Information	See also Section 13 for disposal information.

7. HANDLING AND STORAGE

Handling	Minimize generation of dust. Avoid inhalation of dust as well as prolonged and/or repeated skin and eye contact. Use in well-ventilated areas to prevent formation of explosive dust-air mixture.
Storage	Keep containers closed and dry. Protect product from moisture and wet air. This material is suitable for any general chemical storage area. Isolate from incompatible materials such as strong oxidizing agents.
Recommended Storage Temperature	Store in original packing and in a cool and dry place at ambient temperature.
General Comments	Containers should not be opened until ready for use. It is recommended that products be retested if stored for more than 3 years.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure Guidelines	Exposures to this product should be controlled below the limits established for: <ul style="list-style-type: none">▪ Dust (general) – Particulates Not Otherwise Classified/Regulated (PNOC/PNOR)<ul style="list-style-type: none">• OSHA PEL/TWA = 15 mg/m³ (total dust) ; 5 mg/m³ (respirable fraction) <p>[Ref: ACGIH Guide to Occupational Exposure Values, 2012 Edition]</p>
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.
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.
Eyes/Face	Dust-tight goggles should be worn when handling this product.
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	micro-granules
Color	white
Odor	odorless
Boiling Point	not applicable
Bulk Density	600 – 800 kg/m ³
Evaporation Rate (Butyl Acetate=1)	not determined
Melting Point	decomposes prior to melting
Odor Threshold	not determined
pH	6.5 – 7 (1% solution)
Partition Coefficient (n-octanol/water)	Log P _{ow} < 0
Solubility in water	~ 900 g/L (68°F / 20°C)
Solubility in other solvents	not determined
Specific Gravity	not applicable
Vapor Density (Air = 1)	not applicable
Vapor Pressure	not applicable
Viscosity	not applicable
Volatiles (% by weight)	not determined
Other	not determined
Flammability	not flammable or combustible
Flash Point (Method)	not applicable
Upper Flammable Limit (% by volume)	not applicable
Lower Flammable Limit (% by volume)	not applicable
Lower Explosion Limit	≥ 40 g/m ³
Auto-ignition Temperature	> 572°F (300°C) / glowing temperature of 5 mm product layer

< : less than > : greater than ~ : approximately

10. STABILITY AND REACTIVITY

Chemical stability	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.
Conditions to avoid	Avoid prolonged storage at elevated temperatures. Avoid humid conditions as product is hygroscopic. Product layer on hot surface might cause glowing or autoignition.
Incompatible materials	This product is incompatible with strong oxidizers.
Hazardous decomposition products	Thermal decomposition products may release toxic and/or hazardous fumes and gases, including nitrogen oxides, carbon oxides, metal oxides and water vapor.
Possibility of hazardous reactions	Hazardous polymerization is not expected to occur under normal temperatures and pressures.

11. TOXICOLOGICAL INFORMATION

General Information	There is no data available on Magnesium disodium EDTA. The following data was obtained with structurally related products:
Acute Toxicity (Oral / Dermal / Inhalation)	Ferric sodium EDTA Oral : LD ₅₀ > 2000 mg/kg Dermal : LD ₅₀ > 2000 mg/kg Inhalation : 4h LC ₅₀ > 2.75 mg/L (maximum attainable concentration)
Irritation (Skin / Eyes / Respiratory)	Not irritating to skin, eyes and respiratory tract.
Chronic Toxicity (Oral / Dermal / Inhalation)	In a repeated 31/61-day oral study on rats with Ferric-sodium EDTA, the NOAEL ≥ 84 mg/kg. Chronic ingestion of NTA (and its sodium salts) has been shown to cause kidney toxicity.
Sensitization	Magnesium disodium EDTA is not expected to be a dermal sensitizer based on tests with related EDTA salts.
Carcinogenicity	Nitrioltriacetic acid (NTA) and its salts were determined to be "possibly carcinogenic to humans" (Group 2B) by IARC, a compound which "may reasonably be anticipated to be a human carcinogen" by NTP and a "select carcinogen" by OSHA.
Mutagenicity	Related products (Manganese disodium EDTA and Ferric sodium EDTA) gave negative results in the Ames Test and the Micronucleus Test. NTA and its sodium salts were not genotoxic in experimental systems in vivo. Neither the acid nor its salts were genotoxic in mammalian cells in vitro and they were not mutagenic to bacteria.
Developmental Toxicity	No data available for the mixture.
Reproductive Toxicity	Manganese disodium EDTA: NOAEL for reproduction is 500 mg/kg (decreased sperm motility / decreased number of live pups). EDTA and its sodium salts have been reported, in some studies, 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. Trisodium NTA is not teratogenic and did not induce reproductive toxicity.
Other Effects	Manganese disodium EDTA: Neurotoxicity NOAEL ≥ 1500 mg/kg.
Target Organs	Eyes, kidney and bladder.

12. ECOLOGICAL INFORMATION

General Information	There is no data available on Magnesium disodium EDTA. The following data was obtained with structurally related products:
Ecotoxicity	EDTA, manganese-disodium complex Fish (zebra fish) : 96-hr NOEC ≥ 1000 mg/L (OECD 203) Daphnia magna: 21-day NOEC = 42.8 mg/L (OECD 211) Algae: 72h EC ₅₀ = 649.3 mg/L / NOEC = 15 mg/L / ErC ₁₀ = 42.8 mg/L (OECD 201) Bacteria (activated sludge / respiratory inhibition test) : 3-hr NOEC = 640 mg/L (OECD 209) EDTA, ferric-sodium complex Fish (rainbow trout): 96h LC ₅₀ > 100 mg/L ; Fish (zebra fish) 35-day NOEC = 28.9 mg/L Daphnia magna: 48h EC ₅₀ = 100.9 mg/L ; 21-day NOEC = 31 mg/L Algae: 72h NOEC = 69.9 mg/L

12. ECOLOGICAL INFORMATION (CONTINUED)

Biodegradation	Inherently biodegradable - 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 considerably enhanced and as such EDTA is considered ultimately biodegradable. A related product (EDTA ferric-sodium complex) is photodegradable with a half-life of 20 days.
Bioaccumulation	This substance has a low potential for bioaccumulation [Log K _{ow} < 3].
Chemical fate	The substance is not expected to enter the atmosphere significantly due to its high water solubility. Chemical Oxygen Demand (COD) is approximately 615 mg/g.
Other information	None available.

13. DISPOSAL CONSIDERATIONS

Waste Disposal	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.
Container Disposal	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

Shipping Information	Not regulated for transport.
Emergency Response Guidebook (2012 ERG)	Not applicable.
Environmentally Hazardous Substances [49 CFR 172.101, Appendix A]	None

15. REGULATORY INFORMATION

Regulatory Lists / Inventories: The components are subject to the following regulatory lists and inventories:

Substance Name	CAA	CERCLA	IARC	US State Right-To-Know Lists	CA Prop 65	SARA
Magnesium 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
Trisodium NTA	N/R	N/R	X (Gr. 2B)	MA	N/R (note 1)	N/R
Water	N/R	N/R	N/R	N/R	N/R	N/R

1. A related product "Trisodium NTA monohydrate" [CAS #18662-53-8] is known to the State of California to cause cancer.

15. REGULATORY INFORMATION (CONTINUED)

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							
Magnesium disodium EDTA	X	X		X	X	X	X		X	X
Disodium EDTA	X	X		X	X	X	X	X	X	X
Trisodium NTA	X	X		X	X	X	X	X	X	X
Water	X	X		X	X	X	X	X	X	X

California Regulations

California Department of Food and Agriculture (CDFA): Dissolvine E-MG-6 is approved for sale and distribution in California as a micronutrient.

CANADA – WHMIS (Workplace Hazardous Materials Information System)

Class D2A (Other toxic effects)
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.

CANADA – CFIA (Canadian Food Inspection Agency)

Micronutrient Approval – Dissolvine E-MG-6 is approved for sale and distribution in Canada under the Fertilizers Act.

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.

Date of Issue / Revision

April 26, 2013

Revision

13.0

Changes

Sections 2, 3, 11, 15, 16

Prepared by

Akzo Nobel Services Inc. (Regulatory Affairs Americas / HSE Product Safety)

Technical Information Contact

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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
ENCS	Japan Existing and New 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
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

16. OTHER INFORMATION (CONTINUED)

NIOSH	National Institute for Occupational Safety & Health
NJ R-T-K	New Jersey – R-T-K Hazard List
NOAEL	No Observed Adverse Effect Level
NOEC	No Observed Effect Concentration
NOEL	No Observed Effect Level
N/R	Non Regulated
NTP	National Toxicology Program
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
X	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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