

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Name	Dissolvine® NA2-S
Chemical Name	Ethylenediaminetetraacetic acid, disodium salt, dihydrate
Synonym(s)	Disodium EDTA dihydrate
Product Use	Chelating agent
Manufacturer / Supplier	Akzo Nobel Functional Chemicals LLC Chelates Americas 525 West Van Buren St., Chicago, IL 60607 Tel. 1-800-906-7979 www.dissolvine.com
Emergency Telephone Numbers	
CHEMICAL	CHEMTREC (800) 424-9300 (Toll-free in the U.S., Canada, and the U.S. Virgin Islands)
EMERGENCY	(24-hr) (703) 527-3887 (For calls originating elsewhere / collect calls are accepted)
(Spill, Leak, Fire, Exposure or Accident)	CANUTEC (613) 996-6666 (Canada)
MEDICAL / HANDLING EMERGENCIES	(914) 693-6946 [AkzoNobel – USA]

2. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

CAUTION !	Contact with dust may cause skin, eye and respiratory tract irritation.
Appearance and odor	Odorless white free-flowing powder.
Fire & Explosion Hazards	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).

POTENTIAL HEALTH EFFECTS [See Section 11 for additional information]

Primary Route(s) of Exposure	Eye contact, skin contact and inhalation
Acute Exposure	
Inhalation	Exposure to an excessive concentration of dust may cause respiratory tract discomfort and/or mild irritation.
Skin Contact	Disodium EDTA dihydrate was moderately irritating to rabbit skin, causing reversible effects such as redness, slight edema, scabbing and scarring after repeated application.
Eye Contact	Eye contact with dust may cause mild physical irritation.
Ingestion	This product is expected to have a low order of acute toxicity.
Carcinogenicity	IARC, NTP, ACGIH and OSHA do not classify this material as a carcinogen or suspect carcinogen.
Reproduction	EDTA and its sodium salts caused birth defects in some animal studies in the presence of maternal toxicity
Medical Conditions Aggravated by Exposure	There are no data available that address medical conditions that are generally recognized as being aggravated by exposure to this product.

2. HAZARDS IDENTIFICATION (CONTINUED)

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.

3. COMPOSITION / INFORMATION ON INGREDIENTS

INGREDIENTS	CAS Number	% (w/w)
EDTA disodium salt	139-33-3	89 – 91
Water	7732-18-5	9 – 11

4. FIRST AID MEASURES

Inhalation 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.

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. Do not let victim rub eye(s). Do not attempt to neutralize with chemical agents. Get medical attention if eye irritation occurs.

Ingestion Give several glasses of water. DO NOT induce vomiting. If vomiting occurs, keep head below hips to reduce risk of aspiration. Give fluids again. Never give anything by mouth to a person who is unconscious or convulsing. 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 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).

Hazardous Combustion Products Thermal decomposition products may release toxic and/or hazardous fumes and gases, including nitrogen oxides and carbon oxides.

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

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions All personnel involved in spill cleanup should avoid skin and eye contact by wearing appropriate personal protective equipment.

Methods for Containment Safely stop source of spill. Restrict non-essential personnel from area.

6. ACCIDENTAL RELEASE MEASURES

Environmental Precautions	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. Flush remainder with water.
Methods for Clean-up	Using a stiff brush, work the slurry into cracks and crevices. Allow to stand for 2-3 minutes. Then flush again with water. Repeat if necessary. Dike water for later disposal. Do not allow contaminated water to enter waterways. CAUTION – The spill area may be slippery.
Other Information	See also Section 13 for disposal information.

7. HANDLING AND STORAGE

Handling	Avoid inhalation of dust as well as prolonged and/or repeated skin and eye contact.
Storage	Keep containers closed and dry. This material is suitable for any general chemical storage area. Store in PVC, PE, stainless steel or bituminized tanks. Avoid contact with aluminum, copper, copper alloys, nickel and zinc.
Recommended Storage Temperature	Store in a cool and dry place at ambient temperature (below 25°C / 77°F).
General Comments	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. In certain concentrations, the product may form an explosive dust-air mixture. Protect product from moisture and wet air.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure Guidelines

Chemical Name	OSHA – PELs (mg / m ³)		ACGIH – TLVs (mg / m ³)		NIOSH – RELs (mg / m ³)		AIHA – WEELs (mg / m ³)	
	TWA	STEL / CEIL(C)	TWA	STEL / CEIL(C)	TWA	STEL / CEIL(C)	TWA	STEL / CEIL(C)
EDTA, disodium salt	N/D	N/D	N/D	N/D	N/D	N/D	N/D	N/D
Water	N/D	N/D	N/D	N/D	N/D	N/D	N/D	N/D

[Ref: ACGIH Guide to Occupational Exposure Values, 2008 Edition]

Legend:

CEIL:	Ceiling Exposure Limit	PEL:	Permissible Exposure Limit	REL:	Recommended Exposure Limit
STEL:	Short Term Exposure Limit	TLV:	Threshold Limit Value	TWA:	Time-Weighted Average
N/D:	Not Determined	WEEL:	Workplace Environmental Exposure Level		
ACGIH:	American Conference of Governmental Industrial Hygienists				
AIHA:	American Industrial Hygiene Association				
NIOSH:	National Institute for Occupational Safety and Health				
OSHA:	Occupational Safety and Health Administration				

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)

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.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION (CONTINUED)

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% Viton gloves are recommended.
Eyes/Face	Since eye contact with dust may cause irritation, chemical goggles and/or a face shield 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	powder
Color	white
Odor	odorless
Boiling Point	not applicable
Bulk Density	~ 700 kg/m ³
Evaporation Rate (Butyl Acetate=1)	not determined
Melting Point	110°C (230°F) / loss of crystallization
Odor Threshold	not determined
pH	~ 4.0 – 6.0 (5% solution)
Partition Coefficient (n-octanol/water)	Log P _{ow} < 0
Solubility in Water	~ 100 mg/L (at 20°C / 68°F)
Solubility in Other Solvents	not determined
Specific Gravity	not determined
Vapor Density (Air = 1)	not applicable
Vapor Pressure	not applicable
Viscosity	not applicable
Volatiles (% by weight)	not determined
Other	decomposition temperature = 255°C (491°F)
Flammability	not flammable or combustible
Flash Point (Method)	not applicable
Upper Flammable Limit (% by volume)	not applicable
Lower Flammable Limit (% by volume)	not applicable
Auto-Ignition Temperature	not applicable

< : 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 contact with aluminum, nickel, zinc, copper and copper alloys in combination with humidity/water (formation of hydrogen). Avoid prolonged storage at elevated temperatures.
Incompatible Materials	This product is incompatible with strong oxidizers.

10. STABILITY AND REACTIVITY (CONTINUED)

Hazardous Decomposition Products	Under fire conditions the product may support combustion and decomposes to give off carbon oxides fumes (CO, CO ₂) and nitrogen oxides.
Possibility of Hazardous Reactions	Hazardous polymerization is not expected to occur under normal temperatures and pressures.

11. TOXICOLOGICAL INFORMATION

Inhalation - Acute	The acute LC ₅₀ for this product is not available. There were no mortalities when rats were exposed to a saturated dust atmosphere (nominal concentration of 1.13 mg/L) for 7 hours. Exposure to an excessive concentration of dust may cause respiratory tract discomfort and/or mild irritation.
Inhalation - Chronic	No known effects for this product.
Skin - Acute	Dermal toxicity for this product is not available. A 4-hour human exposure to 0.2 g of 99% pure Disodium EDTA showed no irritation. Disodium EDTA dihydrate was moderately irritating to rabbit skin causing reversible effects such as redness, slight edema, scabbing and scarring after repeated application.
Skin - Chronic	No known effects for this product.
Eyes	This product is slightly irritating to rabbit eyes.
Ingestion - Acute	The oral LD ₅₀ is greater than 2,000 mg/kg (rat).
Ingestion - Chronic	Disodium EDTA was administered in the feed of male rats for 4 weeks and female rats for 31 days. There were no adverse effects at the lowest tested dose of 692 mg/kg/day for male rats and 237 mg/kg/day for female rats (NOAEL). As well, in a 2-year study, rats were fed diets containing 0.5, 1 or 5% Disodium EDTA. There were no mortalities attributed to the treatment.
Sensitization	No known effects for this product.
Carcinogenicity	IARC, NTP, ACGIH and OSHA do not classify this material as a carcinogen or suspect carcinogen.
Mutagenicity	Disodium EDTA dihydrate gave negative results in numerous tests (such as Ames Assay, Mouse Lymphoma Assay, Micronucleus Assay). Disodium EDTA dihydrate did induce a dose-dependent increase in chromosome aberrations in CHL fibroblast cells with metabolic activation.
Reproductive Toxicity	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. Disodium EDTA had no effect on mouse sperm morphology.
Other Effects	None known.
Target Organs	Eyes, skin and developmental (in the presence of maternal toxicity).

12. ECOLOGICAL INFORMATION

Ecotoxicity No data available for this product. However, the following information is available for a structurally related product:

Test	Exposure / Duration	Test Results
Algae (<i>green algae</i>)	96-h	EC ₅₀ = 1.14E8 mg/L (calculated by EPIWIN model)
Fish (<i>guppy</i>)	96-h	LC ₅₀ = 320 mg/L
Bacteria (<i>Pseudomonas putida</i>)	8-h	EC ₅₀ = 56 mg/L

12. ECOLOGICAL INFORMATION (CONTINUED)

Biodegradation	This product is not readily biodegradable (based on tests with structurally related products).
Bioaccumulation	It is not expected to bioaccumulate. The calculated Log Pow is – 11.7 (EPIWIN/KOWWIN models).
Other Ecotoxicity information	Disodium EDTA did not undergo photodegradation under laboratory conditions.

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

Regulatory Information	UN Number	Proper Shipping Name	Class	PG	Label	Additional Information
US DOT TDG – Canada IMDG IATA/ICAO	N/R	N/R	N/R	N/R	N/R	Not regulated for transport.

Emergency Response Guidebook (2008 ERG) Not applicable

Environmentally Hazardous Substances None known
[49 CFR 172.101, Appendix A]

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
EDTA, disodium salt	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							
EDTA, disodium salt	X	X		X	X	X	X	X	X	X
Water	X	X		X	X	X	X	X	X	X

15. REGULATORY INFORMATION (CONTINUED)

Legend

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
FL LIST	Florida – Substance List
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
MA LIST	Massachusetts – R-T-K Substance List
MN LIST	Minnesota – Hazardous Substance List
NDSL	Non-Domestic Substances List – Canada
NJ R-T-K	New Jersey – R-T-K Hazard List
N/R	Non Regulated
NZIoC	New Zealand Inventory of Chemicals
PA LIST	Pennsylvania Hazardous Substance List
PICCS	Philippines Inventory of Chemicals and Chemical Substances
RI LIST	Rhode Island – Hazardous Substance List
SARA	SARA Title III, Section 302 / 313
TSCA	Toxic Substances Control Act – USA
X	Listed and/or Regulated

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

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

16. OTHER INFORMATION

HMIS 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)]

Trademark

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

Date of Issue / Revision

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Revision #

10.0

Changes

Section 16 / Logo

Prepared by

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Disclaimer

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