

According to Regulation (EC) No. 1907/2006

DISSOLVINE D-FE-11

1. IDENTIFICATION OF THE SUBSTANCE OR PREPARATION AND THE COMPANY/UNDERTAKING

Product label name Diethylenetriaminepentaacetic acid, ferric sodium complex	
Supplier Akzo Nobel Functional Chemicals bv Stationsstraat 77 PO Box 247 NL-3800 AE Amersfoort Tel.: +31 334676767	
E-mail address of person responsible for safety data sheet SDS_chelates@AkzoNobel.com	
Emergency telephone AkzoNobel Chemicals-Deventer-NLT +31 570 679211 F +31 570 679801	
Relevant identified uses of the substance or mixture chelating agent plant nutrient	
Date of last issue / Revision number 2010-12-15 / 1.00	

2. HAZARDS IDENTIFICATION

Not classified as hazardous according to the EEC Dangerous Substance Directive and Dangerous Preparation Directive
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Signal word/Hazard statement(s) GHS	
Code	Description
HAHU0122.	Not classified as hazardous according to the European regulation on classification, labelling and packaging of substances and mixtures (CLP).

3. COMPOSITION/INFORMATION ON INGREDIENTS

This product is to be considered as a substance in conformance to EC directives			
Information on hazardous ingredients			
Chemical description Diethylenetriaminepentaacetic acid, ferric sodium complex			
Composition / information on ingredients			
Number	% w/w	CAS-number	Chemical name
1	95 - 100	012389-75-2	Diethylenetriaminepentaacetic acid, ferric-sodium complex

	REACH Registration number	EC-number	Classification according to 1272/2008 as amended		Classification according to 67/548/EEC as amended
1		235-627-0			none

Other information Balance: water
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4. FIRST AID MEASURES

Most important symptoms and effects No typical symptoms and effects known.
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Description of first aid measures	
General	In all cases of doubt, or when symptoms persist, seek medical attention.
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	No special measures required.
Eye	Rinse thoroughly with plenty of water. Eyelids should be held away from the eyeball to ensure thorough rinsing. Seek medical advice if irritation persists.
Ingestion	No special measures required.
Indication of any immediate medical attention and special treatment needed	
No additional information available.	

5. FIRE-FIGHTING MEASURES

Extinguishing media	waterspray, foam, Carbon dioxide, dry chemical powder
Unsuitable extinguishing media	none known.
Hazardous decomposition / combustion products	Nitrous gases may be produced
Protective equipment	Use self-contained respiratory equipment.
Fire and explosion hazard	In case of fire and/or explosion do not breathe fumes.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions	For personal protection see Section 8
Environmental precautions	Collect as much as possible in a clean container for (preferable) reuse or disposal.
Methods and material for containment and cleaning up	Flush remainder with water (Absorb the remainder with e.g. vermiculite). See section 13.

7. HANDLING AND STORAGE

Precautions for safe handling	Avoid dust generation.
Fire and explosion prevention	In certain concentrations the product may form an explosive dust-air mixture.
Conditions for safe storage	No specific recommendations
Other information	Protect product from moisture and wet air. Keep container tightly closed and dry

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters	Do not breathe dust.
Personal protection	
Respiratory	In case of dust formation use dust mask. Dust exposure limits have to be respected.

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<p>Hand For permanent (>480 minutes), full contact use, 100% nitrile gloves conforming to EN 374, e.g. KCL Dermatril 740 are recommended. If used under conditions other than given above it is recommended that a supplier of CE approved gloves is contacted. These recommendations are only applicable to the chemical as supplied by Akzo Nobel; if mixed with or dissolved in other substances please contact a supplier of CE approved gloves (e.g. KCL International +49 66 59870, fax +49 6659 87155).</p>
<p>Eye The usual precautions for handling chemicals should be observed.</p>
<p>Skin and body The usual precautions for handling chemicals should be observed.</p>

Dust (general)		
Time Weighted Average (TWA)	10 mg/m ³	inhalable dust.
Time Weighted Average (TWA)	4 mg/m ³	respirable dust.

9. PHYSICAL AND CHEMICAL PROPERTIES

<p>Appearance powder (25 °C)</p>
<p>Colour yellow - green</p>
<p>Odour odourless</p>
<p>Boiling point/range not applicable</p>
<p>Melting point/freezing point Decomposes prior to melting</p>
<p>Flash point not applicable</p>
<p>Flammability no</p>
<p>Explosive properties no</p>
<p>Oxidising properties no</p>
<p>Vapour pressure not applicable</p>
<p>Density not applicable</p>
<p>Bulk density 650-750 kg/m³</p>
<p>Solubility in water approx. 110 g/l</p>
<p>Solubility in other solvents not determined</p>
<p>pH value 2.5-3.5 (1% solution)</p>
<p>Partition coefficient n-octanol/water Log Pow < 0</p>
<p>Relative vapour density (air=1) not applicable</p>

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Viscosity not applicable
Autoignition temperature >200 °C (glowing temperature of 5 mm product layer)
Upper/lower flammability or explosive limits Lower Explosion Limit $\geq 40 \text{ g/m}^3$

10. STABILITY AND REACTIVITY

Conditions to avoid Reaction with strong oxidising agents. Product layer on hot surface might cause glowing or autoignition.
Chemical stability Stable under recommended storage and handling conditions (see section 7)
Incompatible materials none known
Hazardous decomposition products Emits toxic fumes under fire conditions (nitrous gases (NO _x)).

11. TOXICOLOGICAL INFORMATION

No experimental toxicological data of the product as such available. From structurally related products the following may be expected;	
Ethylenediaminetetraacetic acid, ferric-sodium complex	
Acute toxicity	
Oral LD50 : rat: LD50 >2000 mg/kg bw (no mortality at highest dose level 2000 mg/kg) (Method: OECD 423, GLP)	
Dermal LD50 : rat: >2000 mg/kg (no mortality at: Highest dose level: 2000 mg/kg) (OECD 402, GLP)	
Inhalation LC50 rat: 4-h LC50 >2.75 mg/L (OECD 403, GLP)	
Summary of toxicological information The substance is a solid with low toxicity. No local or systemic effects were observed in acute studies. It is not irritating to skin and irritating to the eyes. The substance is not sensitising. Data obtained via oral application 31/61 days showed no test item / dose response related toxicological effects observed; 11.2 mg Fe per kg bw corresponds with $421/56 \times 11.2 = >84 \text{ mg per kg bw}$. EDTA-FeNa.3H ₂ O is not mutagenic, data on carcinogenicity is not available. There is no data for EDTA-FeNa.3H ₂ O on reproductive toxicity. Based on studies with other EDTA compounds EDTA-FeNa.3H ₂ O is not classified for reproductive toxicity. EDTA compounds are not reproductive toxicants when fed with a nutrient sufficient diet or minimal diets supplemented with Zn.	
Germ cell mutagenicity Based on available data, the classification criteria are not met.	
STOT - single exposure conclusive but not sufficient for classification.	
STOT - repeated exposure conclusive but not sufficient for classification.	
Aspiration hazard Based on available data, the classification criteria are not met (solid)	
Irritation	
Skin Rabbit: Non-irritating. 0.5g, 4-hours, semi-occlusive (OECD 404, GLP)	
Eye Rabbit: Non-irritating. 0.1g, (OECD 405, GLP)	
Respiratory Based on available data, the classification criteria are not met. (In an acute inhalative toxicity test in rats no adverse effects were observed on the respiratory tract, which would justify a classification as an irritant to the respiratory tract.)	

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<p>Sensitization Skin: mouse: Not sensitizing (Method: OECD 429, GLP) Respiratory: Due to the lack of skin sensitizing potential it is unlikely that this substance is a respiratory sensitizer.</p>
<p>Genotoxicity Source of key data: IUCLID datasheet: in vitro: Ames: Negative. OECD 471, not GLP. WP2 Mutoxitest : Negative. no guideline followed, not GLP. MN, micronucleus test: positive with metabolic activation. OECD 487, GLP. Mouse lymphoma test: ambiguous. OECD 476, not GLP. Discussion: EDTA-FeNa gave negative results in three in vitro mutagenicity studies, viz. the Ames test, the WP2 Mutoxitest, and the micronucleus test following exposure for 4 h (with and without S9 mix) but gave positive results (aneugenicity) following exposure for 20 h (without S9 -mix). The latter was most probably explained by induction of Zn deficiency. The ambiguous results in the mouse lymphoma test were ascribed to cytotoxicity. Overall, it was concluded that classification for genotoxicity is not warranted.</p>
<p>Chronic toxicity / Carcinogenicity Oral: Source of key data: IUCLID datasheet: NOAEL is > 84 mg/kg bw/day for rats after 31/61 days of exposure via the food. Methods similar to OECD 407/408. No test item / dose response related toxicological effects observed; 11.2 mg Fe per kg bw corresponds with $421/56 \times 11.2 = 84$ mg EDTA-FeNa.3H₂O per kg bw. No data on GLP. Inhalation: no data available Reproductive toxicity: Source of key data: IUCLID datasheet: cross reading: EDTA-MnNa₂ Rat ; Fertility/Development: NOAEL maternal toxicity: 500 mg/kg/day. Signs: water consumption, urinary sodium concentration, kidneys weight and histopathology, decreased sperm motility. NOAEL: developmental toxicity: 500 mg/kg/day. Signs: decreased number of females with live born pups, decreased number of (live) pups, increased postimplantation loss (Method: OECD 422, GLP) Discussion: It was concluded that with regard to EDTA-compounds, that the mechanism by which EDTA induced developmental toxicity at high levels of EDTA was the binding of zinc by EDTA resulting in zinc deficiency during embryonic development (Heimbach et al., 2000; RAR, 2004). With regard to EDTA-MnNa₂, binding of Zn will even be less. However, at a very high level of 1500 mg/kg bw EDTA-MnNa₂ was developmental toxic, most probably due to the effect of manganese as other manganese compounds had also shown developmental effects. Such changes were not seen with the zinc chelate of EDTA (RAR, 2004) and are therefore also not expected for iron i.e. EDTa-Fe(NH₄)NH₄O. In contrast, Fe-shortage in dams (fed with 7.5 mg Fe per kg diet instead of 50 mg Fe per kg diet) resulted in greater pup mortality, smaller pup size, and pups with larger hearts, and with smaller kidneys and spleens. EDTA compounds are not reproductive toxicants when fed with a nutrient sufficient diet or minimal diets supplemented with Zn. Neurotoxicity test: No specific information.</p>
<p>Other toxicological information Chronic toxicity (dermal): No data available.</p>

12. ECOLOGICAL INFORMATION

<p>No experimental ecological data are available on the substance as such. From structurally related products the following may be expected;</p>
<p>Ethylenediaminetetraacetic acid, ferric-sodium complex</p>
<p>Ecotoxicity</p>
<p>Ecotoxicological information Source of key data: IUCLID datasheet: The hazard assessment of EDTA-FeNa.3H₂O reveals neither a need to classify the substance as dangerous to the environment, nor is it a PBT or vPvB substance. The substance is expected to have a low potential for adsorption based on its ionic structure under environmental relevant pH conditions and its low log Kow, the low log Kow also indicates that the substance will not be bioaccumulative. There are no further indications that the substance may be hazardous to the environment.</p>
<p>fish Source of key data: Acute toxicity Oncorhynchus mykiss, freshwater, static: 96h-LC50 > 100 mg/l (OECD 203); Read-across CaNa₂-EDTA: Chronic toxicity Danio rerio, freshwater, flow-through: 35d-NOEC ? 28.9 mg/l (as EDTA-FeNa.3H₂O) (OECD 210)</p>

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<p>daphnia Acute toxicity, Daphnia magna 100,9 mg/L (OECD 202, water), NOEC after 21 days is 25 mg/L (EEC Guideline XI/681/86, Draft 4)</p>
<p>algae Pseudokirchneriella subcapitata, freshwater: 72h-ErC50 > 69.9 mg/l, 72h-NOErC = 69.9 mg/l (OECD 201)</p>
<p>bacteria NOEC of 640 mg/L (OECD 209 test)</p>
<p>Mobility in soil n.a.</p>
<p>Fate</p>
<p>Degradation Abiotic Read across Fe(III)-EDTA: Photodegradable: Half-life = 20 days (EU RAR); Expected to be resistant to hydrolysis</p>
<p>Degradation Biotic EDTA (acid form) and its salts are not readily biodegradable according to OECD criteria, for justification for read-across see IUCLID 5, Chapter 13. It was shown that under special conditions like adaptation or slightly alkaline pH, which is realistic under environmental surface water conditions, the biodegradability of EDTA is considerably enhanced. Therefore it can be concluded that EDTA is ultimately biodegradable under such environmental conditions.</p>
<p>Bioaccumulation Bioaccumulation testing is not required, as the substance has a low potential for bioaccumulation (log Kow < 3). Read across EDTA-Na4: 28-day BCF study in fish (Lepomis macrochirus): BCF between 1 and 2 (Bishop & Maki, 1980)</p>
<p>Other information n.a. Source of key data: IUCLID datasheet: In accordance with column 2 of REACH (Regulation 1907/2006/EC) Annex IX, bioaccumulation testing is not necessary as the substance has a low potential for bioaccumulation (the log Kow is <3). The estimated log Koc values are less than the threshold value of 3, indicating no adsorbing potential.</p>

13. DISPOSAL CONSIDERATIONS

<p>Product According to local regulations.</p>
<p>Contaminated packaging No specific recommendations.</p>

14. TRANSPORT INFORMATION

<p><i>Land transport</i></p>
<p>Transport hazard class not restricted</p>
<p>Classification Code not relevant / not relevant</p>
<p>RID class not restricted</p>
<p>Hazard Identification No. none</p>
<p>Substance Identification No. none</p>
<p>UN number not relevant</p>
<p>Proper Shipping Name not relevant</p>

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<i>Sea transport (IMO / IMDG-code)</i>
Transport hazard class not restricted
Packing group none
UN number none
EMS not relevant
Marine pollutant no
Proper Shipping Name not relevant

<i>Air transport (ICAO-TI / IATA-DGR)</i>
UN number none
Transport hazard class not restricted
Packing group none
Proper Shipping Name not relevant
Other information Keep away from: aluminium + humidity / water

15. REGULATORY INFORMATION

Product label name Diethylenetriaminepentaacetic acid, ferric sodium complex
Labelling according to EC directives
EC-number not applicable

R(isk) phrase(s) (EU classification)	
Code	Description
none	none

S(afety) phrase(s) (EU classification)	
Code	Description
none	none

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Classification according to 67/548/EC as ammended

{NONE}

Other information

Source of key data: IUCLID 5 datasheet:

German Water Hazard Class (WGK)

2 (Internal assessment)

16. OTHER INFORMATION

Relevant hazard statements

Chemical name	Hazard statement(s) (GHS-classification)	

R-pharse information

Chemical name	R(isk) phrase(s) (EU classification)	
Diethylenetriaminepentaacetic acid, ferric-sodium complex	none	none

History

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Composed by	E.C. Rietveld M. Heus
Changes were made in section	All

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