

EndoROOTS[®] granular

Version 2

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Date: 2007-12-11

Supersedes the version from 2005-05-23

1. IDENTIFICATION OF THE SUBSTANCE/PRODUCT AND OF THE COMPANY/UNDERTAKING

- 1.1 Identification of the Substance or Preparation:** **EndoROOTS[®] granular**
- 1.2 Intended use of the Substance/Preparation:** Granular formulation of nutrients, biostimulants and non-harmful micro-organisms for use in turf grass and plant cultivation.
- 1.3 Company/Undertaking Identification:** NOVOZYMES BIOLOGICALS FRANCE S.A.
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Bâtiment 6
60 Route de Sartrouville
78230 LE PECQ
FRANCE
Tel: +33 (0)1 30 15 28 40
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ordersnzb@novozymes.com
- 1.4 Emergency Telephone Number:** +33 (0)1 30 15 28 40 (work hours)

2. HAZARDS IDENTIFICATION

Most Important Hazards: The preparation is not classified as dangerous according to the criteria laid down in Council Directive 1999/45/EC:

Most Important Adverse Human Effects: None identified

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical/trade name	Quantity %	Symbols	R phrase	CAS No.	EINECS, ELINCS
Di-ammonium phosphate	5-10	Xi	36/37/38	7783-28-0	231-987-8
Potash, Sulfate	5-10	Xn	22, 36/37/38	7778-80-5	231-915-5
Ferrous sulphate	1-5	Xn	22, 36/37/38	782-63-0	231-753-5

Other raw materials used have no associated hazards

4. FIRST-AID MEASURES

- Exposure by inhalation: Remove victim to fresh air. Seek medical attention if symptoms occur.
- Exposure by skin and eye contact:
Skin - Immediately wash affected area thoroughly with water. Seek medical attention if irritation develops.
Eyes: Immediately flush eyes with plenty of water and seek medical attention if irritation develops.
- Exposure by ingestion: Do not induce vomiting. Drink fluids to dilute.

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5. FIRE FIGHTING MEASURES

Suitable Extinguishing Media: Water, foam, dry chemical or carbon dioxide extinguishers may be used.

Extinguishing media not to be used: None

Specific Exposure Hazards: If the substance is involved in a fire, oxides of carbon and nitrogen may be evolved.

Protective Equipment for firefighters: Full protective clothing and self-contained breathing apparatus should be worn.

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions: Evacuate personnel from immediate vicinity. Wear appropriate protective clothing (goggles, gloves and a vapour mask). Refer to section 8.

Environmental Precautions: It is not anticipated to be hazardous for environment.

Methods for Cleaning Up: Stop the leak or release at source. Transfer the spillage to waste containers labelled in the same way as the original containers. Clean the spillage area with water and detergent. Small releases should not pose any hazard to the local environment.

7. HANDLING AND STORAGE

7.1 Handling:

Precautions: The substance should be handled under conditions of good occupational safety and hygiene and in accordance with any local regulations in order to avoid unnecessary exposure.

Technical Measures: The use of gloves is recommended to reduce exposure to the preparation.

Specific Requirements: None.

7.2 Storage:

Specific design for Storage rooms or vessels: None

Incompatible Materials: Strong acids or alkali compounds may inactivate biological cultures. Strong oxidising agents. Do not store in metallic containers

Conditions of Storage: Store in a cool, dry, well-ventilated area. Keep containers tightly closed when not in use. Avoid freezing temperatures and above 45 °C to preserve biological stability.

Quantity Limits: None

Packaging Materials: Empty packaging can be recycled or reused.

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8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Exposure limits

WEL 8h dusts = 10 mg/m³ (particles of a diameter < 100µ) et 5 mg/m³ (particle of a diameter < 5µ)

WEL 8h Iron salt (as Fe) = 1 mg/m³ and STEL 15 min iron salt (as Fe) = 2 mg/m³

8.2 Professional exposure control

Engineering Measures:	Engineering controls such as LEV are recommended to reduce exposure to the preparation.
Specific Control Parameters:	None
Personal Protective Equipment:	The provision of personal protective equipment and the need to provide engineering control measures should be decided upon by the user as part of a formal exposure risk assessment. Based upon the available toxicological information the protective measures described below should be regarded as a minimum.
Respiratory Protection:	No special ventilation is usually necessary. However if operating conditions create high airborne concentrations of this material, based upon available information and in the absence of occupational exposure limits the use of a vapour mask to a minimum standard of EN149 with filters compliant with NF EN 143 norm (type FFP1) is recommended.
Hand Protection:	Protective gloves to a Standard EN374. Usage periods should not exceed the breakthrough times for the chemical stated by the manufacturer of the glove.
Eye Protection:	Care should be used to prevent eye exposure and eye protection should be used when handling the preparation (protective equipment as classified in BS2092 or EN166).
Skin Protection:	Avoid skin contact, In case of prolonged/frequent direct handling of the material it is recommended to wear protective clothing as classified by Standard NF EN 13982-1.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Dark brown granule
Odour:	Mild, organic, ammoniacal
pH (10% dispersion):	5.0 – 5.4
Boiling Point/Boiling Range:	Not applicable
Melting Point/Melting Range:	Not applicable
Flash Point:	Not determined
Flammability (Solid, Gas):	Not determined
Autoflammability:	Not determined
Explosive Properties:	Predicted not explosive based on chemical structure.
Oxidising Properties:	Not determined
Vapour Pressure:	Not applicable
Bulk Density:	approx 0.8 – 0.9g/cm ³

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Solubility - Water solubility: < 20% (forms gel)
- Fat solubility: Not determined
Partition coefficient n-octanol/water: Not determined
Other Data: None available

10. STABILITY AND REACTIVITY

Conditions to Avoid: Excessive temperature variations, below 0°C or above 45 °C

Materials to Avoid: Strong acids or alkali compounds may inactivate biological cultures and strong oxidising agents.

Hazardous Decomposition Products: None anticipated

11. TOXICOLOGICAL INFORMATION

11.1 Acute toxic effects

11.1.1 Ingestion, LD50 Rat oral (mg/kg): Not determined
11.1.2 Inhalation, LC50 Rat inhalation (mg/l/4h): Not determined
11.1.3 Skin, LD50 Rat dermal (mg/kg): Not determined
11.1.4 Eye irritation: Not determined

11.2 Chronic toxic effects

11.2.1 Sensitisation: Not determined

12. ECOLOGICAL INFORMATION

Mobility: This preparation forms a gel and retains water. Therefore it is likely to distribute to the terrestrial environment.

Biodegradability: The preparation is expected to biodegrade rapidly. However no information on anaerobic biodegradation is available.

Accumulation: Not anticipated to bioaccumulate and hence, biomagnification is not likely.

Ecotoxicity: The preparation is not anticipated to pose any environmental hazard.
No data on toxicity specifically to soil organisms, plants and terrestrial animals are available.

Other adverse effects: There is no ozone depletion, photochemical ozone creation or global warming potential. Adverse effects in the sewage treatment plant are not anticipated.

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13. DISPOSAL CONSIDERATIONS

Waste from Residues: Dispose of by incineration, landfill or to drain in accordance with local regulations.
Stack gases should be scrubbed.

Contaminated Packaging: Dispose of by incineration or landfill in accordance with local regulations.
Empty packaging can be recycled or reused.

14. TRANSPORT INFORMATION

International Regulations Land: Not applicable.
 Inland waterways: Not applicable.
 Sea: Not applicable.
 Air: Not applicable.

UN classification number: None

Local Regulations: Any relevant local regulations concerning transport should be observed.

15. REGULATORY INFORMATION

EC Regulations: The preparation is not classified as "dangerous" according to the criteria of Council Directives 2001/59/EC and 1999/45/EC are necessary:

Symbols: None
R-phrases: None
S-phrases: S2 Keep out of reach of children

Microbial classification

The preparation is not deemed 'hazardous' according to the requirements of Council Directive 2000/54/EEC. All bacteria contained in this preparation are designated Class 1 according to Council Directive 90/679/EEC (as amended by Council Directive 93/88/EEC) and all other recognized classification systems for micro-organisms.

Local Regulations: Any relevant local regulations should be observed.

16. OTHER INFORMATION

R phrases

R22 Harmful by ingestion
R36 Irritating to eyes
R37 Irritating to the respiratory system
R38 Irritating to skin

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Sources

Detailed composition,

SDS of ingredients.

ECB website <http://ecb.jrc.it/classification-labelling/search-classlab/>

ChemExpertwebsite: <http://www.chemexper.com/index.shtml?main=http://www.chemexper.com/search/cas/3844-45-9.html>

Miscellaneous

Safety/Classification: <http://biosafety.ihe.be/RA/Class/ClassMain.html>

http://www.baua.de/prax/abas/trba_466.pdf

Occupational Exposure: http://europa.eu.int/eur-lex/pri/en/oj/dat/2000/l_262/l_26220001017en00210045.pdf

LEV: Local Exhaust Ventilation

The information contained is based on our knowledge of the product at the date of publishing. It applies to the product as such. In case of formulation or mixture make sure no new danger appear. Users are advised of possible additional danger when the product is used in applications for which it is not intended to. The user must satisfy himself that the product is entirely suitable.

Version 2: revised points: 1-16 (2007-12-11)
