

INAGROSA
Industrias Agrobiológicas, S.A.

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SAFETY DATA SHEET INFORMATION

In accordance with Regulation (EC) N° 1272/2008 and ECHA Version 3.0 Dec. 2015;GHS/REACH (EC) 453/2010

FOSNUTREN

Version 4.1 –This replaces all previous versions.

Revision Date: 28-02-2017

FOSNUTREN

SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1. Product Identifier.-

Trade name	FOSNUTREN
Internal code	BIO 102
Product definition	Amino acid mixture enriched with Nitrogen and Phosphorous
CE No	Not applicable
CAS No	Not applicable
REACH or NRN	Not applicable

1.2. Relevant identified uses of the mixture and uses advised against.-

Relevant identified uses	CE Fertilizer. Nutrient for agricultural use/Bio fertilizer
Use advised against	None

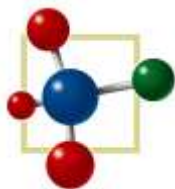
1.3. Information on the supplier of the safety data sheet.-

Company	INDUSTRIAS AGROBIOLÓGICAS, S.A. –INAGROSA
Address	C/ Recoletos, 6. 3º. 28001 MADRID-ESPAÑA
Tel	(+34) 91.435.90.80/91.49
Fax	(+34) 91.575.54.67
Email	fichasseguridad@inagrosa.es inagrosa@inagrosa.es

1.4. Emergency telephone numbers

Phone number	(+34) 964.24.00.33
Opening hours	Only available during the following office hours: 08.30 to 17.00 h (CET)
National Institute of Toxicology (24/7)	(+ 34)91.562.04.20
INAGROSA Transport Dept.	(+ 34)964.56.50.19
Languages	English and Spanish





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SECTION 2: HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture.-

Product definition	Mixture
Regulation (EC) N° 1272/2008 (CLP)	Not classified
GHS/REACH	No hazardous product

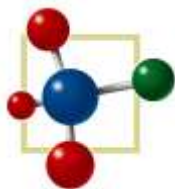
2.2 Label elements

According with (EC) 1272/2008 (CLP)	None
Hazard pictograms	None
Signal word:	None
Hazard statements	None
Supplemental hazard information	None
Precautionary Statements	P102 - Keep out of reach children P401 + P411 - Protect from sunlight. Store at temperatures not exceeding 35°C. Keep/Store away from food, drink and fodder.

2.3 Other hazards

None known	
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SECTION 3: COMPOSITION/INFORMATION ON COMPONENTS

3.2 Mixtures

Ingredient Name	Identifiers	Classification (CLP/GHS)	% Concentration
Ammonium Nitrate	N. CAS 6484-52-2 N. EC 229-347-8	Serious eye damage/eye irritation: Category 2; H272, H319	$1 \geq x \leq 2$
Phosphoric Acid	N. CAS 7664-38-2 N. EC 231-633-2	Skin corrosion/irritation. Category 1B; H314. Serious eye damage/eye irritation: Category 1; H 318	$4 \geq x \leq 5$

For full text of Hazard–statement, see SECTION 15

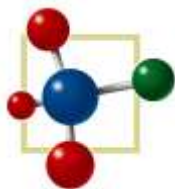
There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Definitions :

N° EC (EU Directive 1831/2003, Feed Additive Register)/EC 1272/2008

N° CAS (Chemical Abstracts Service) Register





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SECTION 4: FIRST AID MEASURES

4.1. Description of first aid measures.

General recommendations	Although there are no foreseeable hazardous effects during use of the mixture, in case of accident, always have the label and/or SDS at hand when contacting a doctor or a poison centre.
Inhalation	In case of inhalation, remove victim into fresh air.
Ingestion	If the product has been swallowed, induce vomiting. Give plenty of water. Get medical attention. No urgent actions will be required.
Skin contact	Rinse the skin with water. Remove the contaminated clothing. Wash the clothing before re-use. Clean the shoes before re-use.
Eye contact	Rinse If a high quantity is thrown or poured on eyes, rinse them gently with plenty of water. Remove contact lenses if present and easy to do. Continue rinsing.
Note to physician	Treat according to symptoms. No need for specific antidote.

UNDER NO CIRCUMSTANCES CAN THE PERSON AFFECTED BE LEFT UNATTENDED AND, IF DUE TO THE ALLERGIC CONDITION OF THE PATIENT THE POISONING IS SEVERE, PLEASE CONTACT THE NATIONAL INSTITUTE OF TOXICOLOGY ON Tel 91 562 04 20, OR EMERGENCY PHONES.

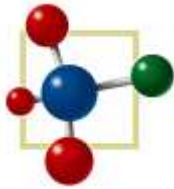
4.2. Most important symptoms and effects, both acute and delayed.

No symptoms or delayed acute effects have been either identified or observed.

4.3. Indication of any immediate medical attention

No indication for immediate medical attention. Treat symptomatically.





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SECTION 5: FIRE FIGHTING MEASURES

5.1. Extinguishing media

	This mixture is not flammable.	
	Suitable extinguishing media	Use any means suitable for extinguishing a surrounding fire.
	Appropriate means of extinguishing fires	In the first instance, take notice of any available materials (water, etc.) in the surroundings. In case of fire it is recommended to use dry dust, carbon dioxide, water or foam. Water spray may be used to cool of containers exposed to fire''
	Inappropriate means for extinguishing fires:	None known

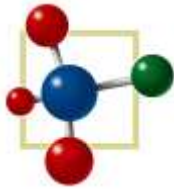
5.2. Specific hazards arising from the mixture.-

	Special hazards	The solution must not be allowed to enter into drains.
	Thermal decomposition or product combustion hazards	In the case of combustion, the product may emit itching and suffocating fumes or, if it has been mixed with other chemical compounds, toxic and corrosive fumes.

5.3. Advise for firefighters.-

	Specific firefighting methods	The product itself is not flammable. The fire extinguishing measures must be coordinated taking into account local and environmental circumstances. Open doors and windows in the area to give maximum ventilation. Avoid breathing the smoke (toxic). Position yourself upwind of the fire. Avoid any contamination of the product with incompatible materials.
	Special protective equipment for firefighting	Use self-contained breathing apparatus in case of smoke.





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SECTION 6: ACCIDENTAL MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Comply with the health and safety policy of the centre, as well as with the safety recommendations, using protective gloves, safety glasses, appropriate clothing and good hygiene practices. Avoid the formation of inhalable spray and dust.

Avoid all contact with the skin. Wear protective gloves, glasses or a facial screen, adequate protective clothing as described in section 8:” Individual Exposure/Protection Controls”. Keep away from ignition sources. Evacuate the hazardous area or consult an expert.

Wear protective gloves (nitrile), safety glasses or a facial screen, adequate protective clothing as described in section 8:” Individual Exposure/Protection Controls”. Keep away from ignition sources. Evacuate the hazardous area or consult an expert.

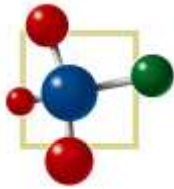
6.2 Environmental precautions:

Take care to prevent contamination of water courses and drains and inform the competent authorities in case of accidental contamination of water courses.

6.3 Methods and material for containment and cleaning up

If practicable, stop flow. Recover liquid when possible. Use absorbent material to collect it (sand, sawdust). Dilute residues with water. Dry and/or allow spill to evaporate





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SECTION 7: HANDLING AND STORAGE

7.1 Personal precautions, protective equipment and emergency procedures

Personal protection measures	Comply with all safety recommendations and practices according to the best personal industrial hygiene and working practices by using the appropriate protective gloves, glasses and clothing. There are no specific recommendations if the product is used correctly
Precautionary firefighting measures	See Section 5. There are no additional precautionary measures.
Environmental protection measures	Always follow the recommended precautions and procedures when using the Product
General work hygiene recommendations	Do not smoke, drink or eat in working areas, wash your hands after using the product; clear away all protective clothing and equipment before entering the eating areas

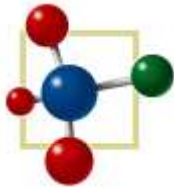
7.2 Conditions for safe storage, including any incompatibilities

	Store in a cool, dry and well ventilated space. Protect from sunlight. Store the product only in their original containers at temperatures not exceeding 35°C and below 0°C. Keep out of the reach of children and animals.
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7.3 Specific end uses

	The only product application is as a fertiliser for soil, foliar or drip irrigation (read product label).
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SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

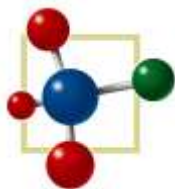
8.1. Control parameters.-

Environmental/Airborne limits, TLV value:	No TLV value have been set up
Biological Limit Value:	No limit wet up for this mixture(product)
Carcinogenicity:	Not listed by IARC, ACGIH, NTP or OSHA as carcinogenic.

8.2. Exposure controls.-

<p>Personal protection measures</p> <p>Respiratory protection</p> <p>Hands</p> <p>Eyes/Face protection</p> <p>Skin and body</p> <p>Hygiene Measures:</p> <p>Recommended monitoring procedures:</p> <p>Environmental exposure controls</p>	<p>All usual precautions in the handling of chemical products must be observed.</p> <p>Wear protective gloves.</p> <p>It is advisable to wear approved chemical protection glasses or a facial screen/full-face shield</p> <p>Wear adequate protective clothing/gloves</p> <p>When using this mixture (product): do not eat, drink or smoke. Wash hands carefully before eating or smoking.</p> <p>Any premises where the product is being stored or used must be adequately ventilated, cool and dry.</p> <p>When the product is being used in powder form it is recommended to do so in a space with forced ventilation system.</p> <p>Comply reasonably with all safety recommendations and practices according to the best personal and occupational hygiene practices by using adequate protective safety gloves, glasses and clothing that completely protects the skin.</p> <p>Use the appropriate ventilation procedures at each step of the process where emissions of vapour or gasses may occur. Ventilate all transport vehicles prior to unloading them.</p> <p>Avoid any possible spillages reaching surface waters or sewers.</p> <p>Use appropriate agricultural practices to minimize ammonia losses due to volatilization. See section 6.</p>
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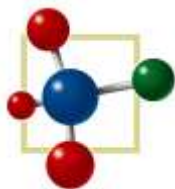
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SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Physical state:	Liquid
Form:	Liquid
Colour:	Dark brown
Odour:	Light odour of ammonia /Characteristic of amines
Odour threshold:	Not determined
pH in 10% solution w/w:	6.5 to 7
Dry substance:	9.85 %
Melting point/range:	Not determined
Freezing point:	- 7,5°C (Freezing point losing Amino Acids its biological activity: -25°C)
Boiling point/range:	115°C
Flash point:	Not determined
Evaporation rate:	<0.005 m Pa (25°C)
Evaporation Index:	NE
Combustibility (solid/gas):	Not determined
Ignition temperature:	Not auto flammable
Lower explosive limit:	It has not been possible to determine it in the experiments
Upper explosive limit:	It has not been possible to determine it in the experiments
Vapour pressure:	<0.005 m Pa (25° C)
Vapour density:	No data available
Apparent Density at 20°C	1.10
Water solubility (20°C in g/100 ml):	Miscible in all proportions in water
N-octanol/water partition coefficient:	Log Kow= -2.9; 2.1 (25°C)
Self-ignition temperature:	Not self-flammable according to the experiments
Thermal decomposition:	Starting at 240 °C
Dynamic viscosity:	52 cP (centipoise)
Kinematic viscosity:	Dynamic viscosity/density= 44.82 CST (centistokes) = 0.00004482 m ² /s
Explosive properties:	Non explosive
Comburent properties:	No data available
Oxidizing properties	No data available
COEFFICIENT OF SEPARATION FROM WATER AND ORGANIC SOLVENTS:	(N-octanol): Log Kow = -2.9; -2.1 (25 °C)
CONSTANT OF DISSOCIATION:	PKa (α-COOH) Min. 1.8 (Histidine); PKa (α- NH ₃ ⁺) Max. 10.8 (Cysteine)





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9.2. Additional information

CHEMICAL ANALYSIS

METHOD	PARAMETER	RESULT	UNITS
EPA 160.4	Total solids	9.85	%
AOAC 978.02	Total Nitrogen (N)	5.03	% (m/m ssb)
AOAC 920.03	Ammoniacal Nitrogen (N)	1.79	% (m/m ssb)
AOAC958.01	Phosphorus (P)	7.05	% (m/m P2O5)
ATOMIC Absorption	Iron	5.0	mg/Kg
	Potassium (K)	<5.5	mg/Kg
	Magnesium (Mg)	<3.5	mg/Kg
	Sodium (Na)	10	mg/L
	Chlorides	<0.15	%

Radioactive Carbon C-14 1-1-2006; laboratory tests USDA approved: complies with USDA regulations for the tested product at 90.

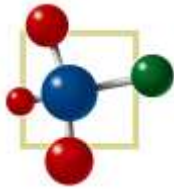
Clean air dilution: VOC is 1.0 g/L meets CAS criteria.

FOR AA ANALISIS: HPLC-FMOC: Perkin Elmer Chromatograph. **Units :** mg/l

Glycine:	800	Valine:	40
Proline:	350	Hydroxi proline:	350
Alanine:	350	Aspartic Acid:	680
Arginine:	30	Glutamic Acid:	225
Lysine:	345	Leucine:	50
Isoleucine:	125	Phenylalanine:	145
Methionine:	25	Serine:	140

Process: Cell pathway biosynthesis (Cellular biosynthesis – extracellular transcription factors)





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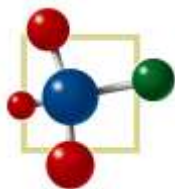
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L-amino acids: 100%
Purity > 99.999%
Toxicity: Not toxic

HEAVY METALS (SPECTROPHOTOMETRY OFFICIAL METHODS):

As	less than	0.005 ppm	Cd	less than	0.008 ppm
Co	“	0.125 ppm	Hg	“	0.002 ppm
Ni	“	0.065 ppm	Pb	“	0.202
Cr	“	0.417 ppm			





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SECTION 10: STABILITY AND REACTIVITY

10.1. Personal precautions, protective equipment and emergency procedures Reactivity.-

Stable under the recommended conditions of storage and handling in their closed original container (see section 7).

10.2. Environmental precautions: Chemical stability.-

Stable for a minimum of 2 years under the recommended conditions of storage and handling in their closed original container (see section 7).

10.3. Methods and material for containment and cleaning up Possibility of hazardous reactions.-

No hazardous reaction products may be formed when heated

10.4. Conditions to avoid.-

Avoid thermic shocks because of the possibility of causing crystallisation.

Avoid storage at temperatures above 35°C and below 0°C, because of the difficulty in handling the product due to an increase in viscosity.

With time (>2 years), there is a slight change in the colour and odour, which do not negatively affect the quality of the product.

10.5. Incompatible materials.-

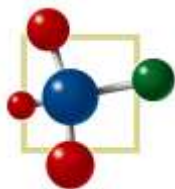
Strong oxidising agents, due to the possibility of producing exothermic reactions.

10.6. Hazardous decomposition products.-

Thermal decomposition will not happen if stored and handled under the normal storage conditions as prescribed.

Hazardous polymerization will not occur.





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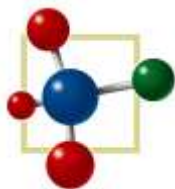
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SECCIÓN 11: TOXICOLOGICAL INFORMATION

11.1. Information on toxicological effects

<p>The product is neither dangerous, toxic, nor harmful, therefore it does not have toxicological effects.</p> <p>Toxicological tests on the active matter FACE, the basis of the bio-stimulant properties of the range of INAGROSA products (NATURCARE, AMINOL-FORTE, FORNUTREN, KADOSTIM and HUMIFORTE), manufactured using the said active material, and that are also referred to with identification codes ULC-87, NOMAR-200 and ALEC-28 showed that:</p>	
In vitro:	No damage, toxicity or genotoxicity were observed.
In vivo:	No toxic effects were observed in oral, intramuscular, intravenous or subcutaneous administration tests on mice, rats, beagles, carried out under international regulations and standardisation protocols for toxicity tests. Therefore the product has been classified as having "low toxicity". Doses of up to 4000 mg/Kg administered by mouth did not show any effect on organs such as the brain, liver, spleen, etc., Calculations of LD50 oral or intravenous acute toxicity in mice and rats were above 2000 mg/Kg.
LD 50 oral(rat) :	Amino Acid complex, not greater than 2000 mg/kg. Classified the mixture and complex as "low oral toxicity".
LD 50 oral(mouse):	Amino acid complex not greater than 2000 mg/Kg. Classified the mixture and complex as "Low oral toxicity"
Oral(gavage) administration to CD rats for 4 weeks:	No dead was occurred. No LD 50 found (LSR, UK-Toxicological Studies 1991)
Oral (capsules) administration to beagle dogs for 4 weeks	Amino acid complexes up to 2500 mg/Kg/day did not elicit evidence of toxicity. No death. Amino acid and mixture classified as "low toxicity"
Mutagenicity:	Not mutagenic or neoplastic
Carcinogenicity:	Not carcinogenic
Reproductive toxicity:	No Evidence in animals
Teratogenicity:	Not Teratogenic





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SECTION 12: ECOLOGICAL INFORMATION

12.1 Toxicity.-

Environmental effects: this product has not harmful effects on the environment. It is an environmentally friendly product. When the product is released into the soil, it improves the fertility of the soil. This product has a short persistence in the soil.

- Environmental toxicity: none known.
- Acute toxicity to fish: no negative effect has been observed in spawn, young fish, sturgeon larva Daphnia Magna): Amino Acid complex LC50>3000mg/L. Rostov Institute. Ex USSR.1990.
- Chronic toxicity to fish (spawn, young fish, fish eggs and sturgeon larvae Daphnia Magna): Amino Acid complex no negative effects have been observed. LDO>2344 mg/L; LD100>3000 mg/L (Rostov Institute. 1990).
- Toxic effect on algae: Amino acid complex nor mixture no growth inhibition observed
- Toxic effects on soil organisms: Amino acids complex nor mixture, no toxic effects observed
- Toxic effects on birds: Amino acid complex no toxic effects to birds
- Toxic effects on pollinating insects: Amino Acids complex no acute toxicity to bees (LD50 bees> 1000 mg/bee (no deaths)
- Chemical content: it contains no Class I or Class II substances that may damage the Ozone layer, defined by 40CFR82 equal to or greater than 1% Wt.
- Eco-toxicology (Summary. For further information, request the complete study from the manufacturer):
LD50 quail > 3.000 mg/kg (no deaths). No toxic.
LC50 trout/salmon > 3.000 mg/kg (no deaths). No toxic

12.2 Persistence and degradability.-

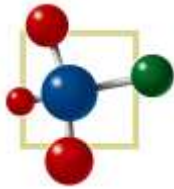
The product is biodegradable in aerobic conditions and the persistence in leaves or in soil is short. The amino acids complex in the soil are digested very fast by the micro flora. The biotic degradation produces more simple metabolites, which are involved in the biochemical processes of live cells and therefore the product is completely biodegradable.

12.3 Bio-accumulation potential.-

Since the substance contains free amino acids and oligopeptides obtained by cellular biosynthesis and not by the hydrosylation of proteins, they are metabolised in the soil very quickly by the microflora and the fauna or absorbed by leaves. They remain in the environment for a very short period showing no tendency to the bioaccumulation.

The NPK contents, in relative small percentages are transported by amino acids and do not accumulate in the soil.





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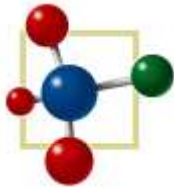
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	12.4 Mobility in soil.-
	<p>The mobility of the product in the soil is very high since it contains free amino acids and oligopeptides obtained by cellular biosynthesis and not by protein hydrolysis, thus being absorbed very quickly and metabolised by microorganisms in the soil.</p> <p>According to experiments carried out using rigorous methodology, it is due to this fact that even if the product is spilled on the soil in large quantities, it does not contaminate either the surface water or groundwater.</p> <p>The NPK contents, in relatively small percentages, are transported by the amino acids and do not accumulate in the soil</p>
	12.5 Other adverse effects.-
	No evidence
	12.6 Additional Information-
	For the complete study to request it to the manufacturer





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SECTION 13: DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Do not contaminate the water, fodder, food or seeds during the disposal of the waste. The open dumping and burning of this product in their containers is strictly forbidden.

Given that the acceptable disposal methods and legal requirements may vary in different countries, the relevant official authorities must be contacted prior to the disposal.

In the case of spillage see section 6.

Do not dump in residual waters

13.2 Container management

Rinse each used container thoroughly three times, pouring the rinsing water into the sprayer tank. The empty container is a hazardous residue, which the user is therefore obliged to take it to the reception point of the integrated management system SIGFITO – only in SPAIN -.

European/Spanish directives relating to this section on the disposal of waste:

2001/573 EC, Decision issued by the Council dated 23 July 2001, which modifies Directive 75/442 EC relating to waste.

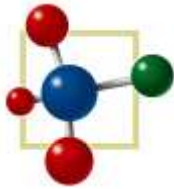
Directive 94/62/EC issued by the European Parliament and the Council dated 20 December 1994, relating to packaging and packaging waste.

In Spain:

11/1997 Act dated 24 April, approving the regulation for the development and implementation of the 11/1997 Act on Packaging and packaging waste. Published in BOE 01/05/1998

MO issued by MAM7304/2002 dated 08 February by which the evaluation and disposal of waste operations and the European waste list were circulated. Published in BOE 19/02/2002





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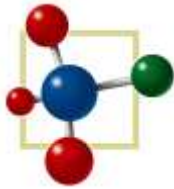
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SECTION 14: TRANSPORT INFORMATION			
14.1 UN number			
	(ADR/RID) by road	(IMDG) by water on vessel	(IATA-DGR) by air
	not applicable	not applicable	not applicable
14.2 United Nations official transport designation:			
	(ADR/RID) by road	(IMDG) by water on vessel	(IATA-DGR) by air
	not applicable	not applicable	not applicable
14.3 Transport hazard class (es):			
	(ADR/RID) by road	(IMDG) by water on vessel	(IATA-DGR) by air
	not applicable	not applicable	not applicable
14.4 Packaging group:			
	(ADR/RID) by road	(IMDG) by water on vessel	(IATA-DGR) by air
	Group III	Group III	Group III
14.5 Environmental hazards:			
	(ADR/RID) by road	(IMDG) by water on vessel	(IATA-DGR) by air
	not applicable	not applicable	not applicable
14.6 Special precautions for user.-			
	None.		





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SECTION 15: REGULATORY INFORMATION

15.1 Safety, health & environmental regulations/legislations specific for the mixture Regulation EC 1907/2006 (REACH).-

Candidate List- Substances of Very High Concern:	Not applicable
Annex XIV -Substances subject to authorization:	Not applicable
Annex XVII - Substances subject to authorization:	Not applicable

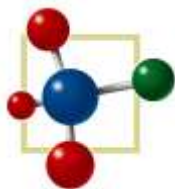
15.2 Chemical safety assessment.-

A chemical safety report has been carried out.

15.3 GHS hazard statement meanings:

H272	May intensify fire; oxidizer
H301	Toxic if swallowed
H314	Causes severe skin burns and eye damage
H318	Causes serious eye damage;
H319	Causes severe eye irritation
H402	Harmful to aquatic life.





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SECTION 16: OTHER INFORMATION

NFPA Ratings: Not found
Product use: Agriculture

Methods for the evaluation of the information referred to in article 9 of the Regulation (EC) N° 1272/2008 used for classification purposes:

Classification based on studies and tests on the active substance and mixture product.

16.1 Chemical safety assessment.-

Full forms of abbreviations

ADR:	European Agreement Concerning the International Carriage of Dangerous Goods by Road
IMDG:	International Maritime Code for Dangerous Goods.
LC50:	Lethal Concentration, 50%
ED50:	Effective Dose, 50%
LD50:	Lethal Dose, 50%
RID:	Regulations concerning the International Carriage of Dangerous Goods by Rail.
IATA-DGR:	International Air Transport Association-Dangerous Goods Regulation.
GHS:	Globally Harmonised System of Classification and Labelling of Chemicals
OSHA:	Occupancy Security & Health Agency-USA
FRC:	Federal Regulation Code-USA
PEL:	Permissible Exposure Limit
WHMIS:	Hazardous Materials Information System
CAS:	Chemical Abstract Service
VOC:	Volatile Organic Cleaner
STEL:	Short Term Exposure Limit
TWA:	Time Weighted Average
TLV:	Threshold Limit Value
NTP:	National Toxicology Programme-USA
CLP:	Classification Labelling and Packaging

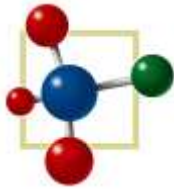
DISCLAIMER:

The information provided in the Safety Information Sheet is the most up-to-date at the time of its publication. The information given is intended only as a safety guide in the handling, use, processing, storing, transport, disposal and release of the product it describes and it must not be considered as a quality guarantee or specification. The information refers only to the specified material and may not be valid for the said material when used in conjunction either with any other substances or processes, unless indicated in the text.

Changes since the last version have been highlighted at the margin if they refer to important safety information, otherwise they are not highlighted.

This SDS version 4.0 of date 01/02/2017. This version updates and replaces all previous versions. Adaptation to the Globally Harmonized System of Classification and Labelling of Chemicals.





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The product names are registered brands of **INDUSTRIAS AGROBIOLOGICAS, S.A. – INAGROSA**

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