

# SAFETY DATA SHEET

(in accordance with Regulation (EU) 2015/830)



## AMMONIUM NITRATE

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### SECTION 1: IDENTIFICATION OF THE SUBSTANCE AND OF THE COMPANY/UNDERTAKING.

#### 1.1 Product identifier.

Product Name: AMMONIUM NITRATE  
Chemical Name: ammonium nitrate  
CAS No: 6484-52-2  
EC No: 229-347-8  
Registration No: 01-2119490981-27-XXXX

#### 1.2 Relevant identified uses of the substance and uses advised against.

Industrial use

#### Uses advised against:

Uses other than those recommended.

#### 1.3 Details of the supplier of the safety data sheet.

Company: **ALDEBARÁN SISTEMAS SL**  
Address: C/Jerónimo Zurita, 10, entlo izda, 50001  
City: Zaragoza  
Province: Zaragoza  
Telephone: 0034976796134  
E-mail: aldebaran@aldebaransistemas.com

#### 1.4 Emergency telephone number: 0034915620420 (Available 24 hours)

### SECTION 2: HAZARDS IDENTIFICATION.

#### 2.1 Classification of the substance.

In accordance with Regulation (EU) No 1272/2008:  
Eye Irrit. 2 : Causes serious eye irritation.

#### 2.2 Label elements.

#### Labelling in accordance with Regulation (EU) No 1272/2008:

Pictograms:



Signal Word:

**Warning**

H statements:

H319 Causes serious eye irritation.  
H272 May intensify fire; oxidiser.

P statements:

P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.  
P220 Keep away from clothing and other combustible materials.  
P280 Wear protective gloves/protective clothing/eye protection/face protection.

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P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
P337+P313 If eye irritation persists: Get medical advice/attention.

### 2.3 Other hazards.

In normal use conditions and in its original form, the product itself does not involve any other risk for health and the environment.

## SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS.

### 3.1 Substances.

#### Mono-constituent.

Chemical Name:	ammonium nitrate
CAS No:	6484-52-2
EC No:	229-347-8
Registration No:	01-2119490981-27-XXXX

### 3.2 Mixtures.

Not Applicable.

## SECTION 4: FIRST AID MEASURES.

### 4.1 Description of first aid measures.

Seek medical attention when necessary.

The inhalation of gases from a fire or thermal decomposition, containing oxides of nitrogen and ammonia, can cause irritation and corrosive effects on the respiratory system. Administer oxygen, especially if there is blue color around the mouth.

#### Inhalation.

Remove the person from the dust exposure center.  
Obtain medical attention if harmful effects occur.

#### Eye contact.

Wash or irrigate the eyes with plenty of water for at least 15 minutes, even behind the eyelids.  
Remove the lenses if you wear them and it is easy to do so.  
Obtain medical attention if eye irritation persists.

#### Skin contact.

Wash the affected area with plenty of water.

#### Ingestion.

Do not induce vomiting.  
Rinse the mouth and give water or milk to drink.  
Obtain medical attention if more than a small amount has been ingested.

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

Inhalation of gases from a fire or thermal decomposition, which contains nitrogen oxides and ammonia, can cause irritation and corrosive effects on the respiratory system. Administer oxygen, especially if there is blue color (methemoglobin) around the mouth.

### 4.3 Indication of any immediate medical attention and special treatment needed.

In case of doubt or when symptoms of feeling unwell persist, get medical attention. Never administer anything orally to persons who are unconscious. Cover the affected area with a dry sterile bandage. Protect the affected area from pressure or friction.

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### SECTION 5: FIREFIGHTING MEASURES.

The product does not present any particular risk in case of fire.

#### 5.1 Extinguishing media.

##### Suitable extinguishing media:

Extinguisher powder or CO<sub>2</sub>. In case of more serious fires, also alcohol-resistant foam and water spray.

##### Unsuitable extinguishing media:

Do not use a direct stream of water to extinguish. In the presence of electrical voltage, you cannot use water or foam as extinguishing media.

#### 5.2 Special hazards arising from the substance.

##### Special risks.

Fire can cause thick, black smoke. As a result of thermal decomposition, dangerous products can form: carbon monoxide, carbon dioxide. Exposure to combustion or decomposition products can be harmful to your health.

#### 5.3 Advice for firefighters.

Use water to cool tanks, cisterns, or containers close to the heat source or fire. Take wind direction into account. Prevent the products used to fight the fire from going into drains, sewers, or waterways.

##### Fire protection equipment.

According to the size of the fire, it may be necessary to use protective suits against the heat, individual breathing equipment, gloves, protective goggles or facemasks, and boots.

### SECTION 6: ACCIDENTAL RELEASE MEASURES.

#### 6.1 Personal precautions, protective equipment and emergency procedures.

For exposure control and individual protection measures, see section 8.

#### 6.2 Environmental precautions.

Prevent the contamination of drains, surface or subterranean waters, and the ground.

#### 6.3 Methods and material for containment and cleaning up.

The contaminated area should be immediately cleaned with an appropriate de-contaminator. Pour the decontaminator on the remains in an opened container and let it act various days until no further reaction is produced.

#### 6.4 Reference to other sections.

For exposure control and individual protection measures, see section 8.

For later elimination of waste, follow the recommendations under section 13.

### SECTION 7: HANDLING AND STORAGE.

#### 7.1 Precautions for safe handling.

Avoid excessive generation of dust.

Avoid contamination by combustible materials (e.j. gas-oil, fats, etc.) and other incompatible materials.

Avoid unnecessary exposure of the product to the atmosphere to prevent moisture absorption.

When handling the product for long periods use appropriate personal protective equipment, e.j. gloves

Carefully clean the installations before carrying out maintenance or repair operations.

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### 7.2 Conditions for safe storage, including any incompatibilities.

Store complying with the regulations: R.D. 2492/1983; R.D. 230/1998 and its amendments.

Locate away from sources of heat and flame.

Always keep it away from combustible materials and substances mentioned in section 10.

In the storage area, make sure that strict rules of order and cleanliness are met.

Do not smoke or use naked portable lamps in the storage area.

Any building used for storage should be clean and well ventilated.

When the nature of the containers and the climatic conditions require it, it will be stored in such a way as to avoid the destruction of the product by thermal cycles (extreme variations in temperature).

The product should not be stored in direct sunlight to avoid physical breakage due to thermal cycling.

### Recommended packaging materials and not recommended.

The appropriate materials for the containers are: steel, aluminum and synthetic plastics.

Do not use copper and / or zinc.

### 7.3 Specific end use(s).

Not available.

## SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION.

### 8.1 Control parameters.

The product does NOT contain substances with Professional Exposure Environmental Limit Values. The product does NOT contain substances with Biological Limit Values.

Concentration levels DNEL/DMEL:

Name	DNEL/DMEL	Type	Value
ammonium nitrate CAS No: 6484-52-2 EC No: 229-347-8	DNEL (Workers)	Inhalation, Long-term, Systemic effects	37,6 (mg/m <sup>3</sup> )
	DNEL (General population)	Inhalation, Long-term, Systemic effects	11,1 (mg/m <sup>3</sup> )
	DNEL (Workers)	Dermal, Long-term, Systemic effects	21,3 (mg/kg bw/day)
	DNEL (General population)	Dermal, Long-term, Systemic effects	12,8 (mg/kg bw/day)
	DNEL (General population)	Oral, Long-term, Systemic effects	12,8 (mg/kg bw/day)

DNEL: Derived No Effect Level, level of exposure to the substance below which adverse effects are not anticipated.

DMEL: Derived Minimal Effect Level, exposure level corresponding to a low risk, that risk should be considered a tolerable minimum.

Concentration levels PNEC:

Name	Details	Value
ammonium nitrate CAS No: 6484-52-2 EC No: 229-347-8	aqua (freshwater)	0,45 (mg/L)
	aqua (marine water)	0,045 (mg/L)
	aqua (intermittent releases)	4,5 (mg/L)
	PNEC STP	18 (mg/L)

PNEC: Predicted No Effect Concentration, concentration of the substance below which adverse effects are not expected in the environmental compartment.

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### 8.2 Exposure controls.

#### **Measures of a technical nature:**

Avoid high dust concentration and provide ventilation where necessary.

During handling do not eat, do not drink or smoke.

Wash your hands after handling the product and before eating, drinking or smoking.

Use the sink at the end of the working day.

<b>Concentration:</b>	<b>100 %</b>
<b>Uses:</b>	<b>Industrial use</b>
<b>Breathing protection:</b>	
If the concentration of dust is high and / or the ventilation is insufficient, use an anti-dust or reflective mask with an adequate filter.	
<b>Hand protection:</b>	
Wear suitable gloves (eg, rubber or leather) when handling the product for long periods of time.	
<b>Eye protection:</b>	
Safety glasses with side shields (EN 166) to prevent eye irritation. If there is dust, use panoramic glasses (mono glasses).	
<b>Skin protection:</b>	
PPE:	Work footwear.
Characteristics:	«CE» marking, category II.
CEN standards:	EN ISO 13287, EN 20347
Maintenance:	This product adapts to the first user's foot shape. That is why, as well as for hygienic reasons, it should not be used by other people.
Observations:	Work footwear for professional use includes protection elements aimed at protecting users against any injury resulting from an accident

## SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES.

### 9.1 Information on basic physical and chemical properties.

Appearance: Granules

Colour: White or colours

Odour: Undourless

Odour threshold: N.A./N.A.

pH: >4,5 (10%)

Melting point: 169,7 °C

Boiling Point: N.A./N.A.

Flash point: N.A./N.A.

Evaporation rate: N.A./N.A.

Inflammability (solid, gas): Non flammable

Lower Explosive Limit: N.A./N.A.

Upper Explosive Limit: N.A./N.A.

Vapour pressure: N.A./N.A.

Vapour density: N.A./N.A.

Relative density: 1,72

Solubility: >100 g/l (higroscópico)

Liposolubility: N.A./N.A.

Hydrosolubility: N.A./N.A.

Partition coefficient (n-octanol/water): N.A./N.A.

Auto-ignition temperature: Non flammable °C

Decomposition temperature: >170°C

Viscosity: N.A./N.A.

Explosive properties: Ammonium nitrate with less than 0.2% combustible matter (UN1942) is not classified as explosive. The tests of A series 1 and 2 show that crystalline ammonium nitrate without impurities is not class 1 explosive. If it is heated under strong confinement conditions (for example, in pipes or sewers) it may give rise to a violent reaction or explosion, especially if there is contamination by some of the substances mentioned in section 10.

Oxidizing properties: UN1942: Classification for transport: Class 5.1, GE III

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N.A./N.A.= Not Available/Not Applicable due to the nature of the product

### 9.2 Other information.

Pour point: N.A./N.A.

Blink: N.A./N.A.

Kinematic viscosity: N.A./N.A.

N.A./N.A.= Not Available/Not Applicable due to the nature of the product

## SECTION 10: STABILITY AND REACTIVITY.

### 10.1 Reactivity.

Stable under the recommended handling and storage conditions.

### 10.2 Chemical stability.

Stable under the recommended handling and storage conditions (see section 7).

### 10.3 Possibility of hazardous reactions.

When it is heated above 170 ° C it decomposes releasing NO<sub>x</sub> and ammonia.

Contamination with incompatible materials.

### 10.4 Conditions to avoid.

Proximity to sources of heat or fire.

Pollution by incompatible materials.

Unnecessary exposure to the atmosphere.

Heating under confinement.

Welding or thermal work on equipment or plants that may contain product residues, without first having been washed to eliminate product remains.

### 10.5 Incompatible materials.

Combustible materials, reducing agents, acids, alkalis, sulfur, chlorates, chlorides, chromates, nitrites, permanganates, metallic powders and substances containing copper, nickel, cobalt, zinc or their alloys.

### 10.6 Hazardous decomposition products.

In case of fire see section 6.

When strongly heated it melts and decomposes, releasing toxic gases (e.g. NO<sub>x</sub>, ammonia).

When in contact with alkaline materials, such as lime, it can produce ammonia gases.

## SECTION 11: TOXICOLOGICAL INFORMATION.

### 11.1 Information on toxicological effects.

a) acute toxicity;

Componentes	NºCAS	Método	Especies	Vía	Resultado
Nitrato amónico	6484-52-2	OECD 401 OECD 402	Rata Rata Rata	Oral Cutánea Respiratoria	DL50: 2950 mg/Kg pc. DL50: >5000 mg/Kg pc. CL50: >88,8 mg/m <sup>3</sup>

b) skin corrosion/irritation; c) serious eye damage/irritation;

Componentes	NºCAS	Método	Especies	Vía	Resultado
Nitrato amónico	6484-52-2	OECD 404 OECD 405	Conejo	Cutánea Ocular	No irritante. Irritante.

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d) respiratory or skin sensitisation;

Compounds	N°CAS	Method	Species	Via	Result
Ammonium nitrate	6484-52-2	OECD 429	Mouse	Cutanea	No sensitising

e) germ cell mutagenicity;

Compounds	N°CAS	Method	Species	Via	Result
Ammonium nitrate	6484-52-2	OECD 471 OECD 473 OECD 476	Bacteria Chromosome aberration Mammalian cell mutation		Negative. Don't mutagenic. Ames Test. Negative. Don't mutagenic. Negative. No mutagenic

f) carcinogenicity;

Compounds	N°CAS	Method	Species	Via	Result
Ammonium nitrate	6484-52-2		Rat	All	Non-carcinogenic

g) reproductive toxicity;

Compounds	N°CAS	Method	Species	Via	Result
Ammonium nitrate	6484-52-2	EOCD 422	Rat	Oral	-Effects on fertility: NOAEL: $\geq$ 1500 mg/kg pc/d. -Toxicity to development: NOAEL: $\geq$ 1500 mg/kg pc/d.

h) STOT-single exposure;

Compounds	N°CAS	Method	Species	Via	Result
Ammonium nitrate	6484-52-2				No available

i) STOT-repeated exposure;

Compounds	N°CAS	Method	Species	Via	Result
Ammonium nitrate	6484-52-2	OECD 422 OECD 453	Rat Rat	Oral (28 days) Oral (52 week)	Subacute oral pathway. NOAEL: $\geq$ 1500 mg/kg pc/d. Chronic oral route: NOAEL: 256 mg/kg pc/d.

j) aspiration hazard;

Compounds	N°CAS	Method	Species	Via	Result
Ammonium nitrate	6484-52-2				See next note

Inhalation of dust at elevated concentrations may cause irritation of the nose, upper respiratory tract, with sinomas such as sore throat and cough.

## SECTION 12: ECOLOGICAL INFORMATION.

### 12.1 Toxicity.

Aquatic toxicity					
Compounds	N°CAS		Fish(Cyprinus carpio)	Crustaceans	Algae(benthic diatoms)
Ammonium nitrate	6484-52-2	Short term	CL50(48h) = 447 mg/l	CE50/CL50(48h)=450mg/l(of potassium nitaret)(Daphnia magna)	CL50/CE50(10días)>1700 mg/l (of potassium nitrate)
		Long term	No necesario	NOEC (168h) = 555 mg/l (Bullia digitalis)	No disponible

Terrestrial toxicity					
Compounds	N°CAS	Macroorganisms	Microorganisms	Terrestrial plants	Other organisms
Nitrato amónico	6484-52-2	Scientifically unjustified	Scientifically unjustified	Scientifically unjustified	No available

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Microbiological activity in wastewater treatment plants		
Compounds	N°CAS	Toxicity to aquatic microorganisms
Ammonium nitrate	6484-52-2	EC50/LC50(180 min) > 1000 mg/l (of sodium nitrate)

### 12.2 Persistence and degradability.

Aquatic toxicity			
Compounds	N°CAS	Degradation	
Ammonium nitrate	6484-52-2	Hydrolysis	Don't hidrolilzable. Essay not necessary.
		Photolysis	No information available
		Biodegradation	Not necessary, inorganic substance.

### 12.3 Bioaccumulative potential.

Bioaccumulation information.  
does not apply. Inorganic substance

### 12.4 Mobility in soil.

Low absorption potential (based on its properties).

### 12.5 Results of PBT and vPvB assessment.

Not required. Inorganic substance. See annex XIII of REACH.

### 12.6 Other adverse effects.

Large spillovers can cause adverse environmental effects such as eutrophication in confined surface waters.

## SECTION 13 DISPOSAL CONSIDERATIONS.

### 13.1 Waste treatment methods.

Dumping in sewers or waterways is not permitted. Waste and empty containers must be handled and disposed of in accordance with local/national laws in force.

Empty the by agitating them containers to eliminate as much as possible their contents. If approved by the local authorities, empty containers may be removed as non-hazardous material or returned for recycling.

## SECTION 14: TRANSPORT INFORMATION.

Transport following ADR rules for road transport, RID rules for railway, ADN for inner waterways, IMDG for sea, and ICAO/IATA for air transport.

**Land:** Transport by road: ADR, Transport by rail: RID.

Transport documentation: Consignment note and written instructions

**Sea:** Transport by ship: IMDG.

Transport documentation: Bill of lading

**Air:** Transport by plane: ICAO/IATA.

Transport document: Airway bill.



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### 14.1 UN number.

UN No: UN1942

### 14.2 UN proper shipping name.

Description:

ADR: UN 1942, AMMONIUM NITRATE, 5.1, PG III, (E)

IMDG: UN 1942, AMMONIUM NITRATE, 5.1, PG III

ICAO/IATA: UN 1942, AMMONIUM NITRATE, 5.1, PG III

### 14.3 Transport hazard class(es).

Class(es): 5.1

### 14.4 Packing group.

Packing group: III

### 14.5 Environmental hazards.

Marine pollutant: No

### 14.6 Special precautions for user.

F-H,S-QLabels: 5.1



Hazard number: 50

ADR LQ: 5 kg

IMDG LQ: 5 kg

ICAO LQ: 10 kg

Provisions concerning carriage in bulk ADR:

VC1 Carriage in bulk in sheeted vehicles, sheeted containers or sheeted bulk containers is permitted.

VC2 Carriage in bulk in closed vehicles, closed containers or closed bulk containers is permitted.

AP6 If the vehicle or container is made of wood or other combustible material, an impermeable surfacing resistant to combustion or a coating of sodium silicate or similar substance shall be provided. Sheeting shall also be impermeable and non-combustible.

AP7 Carriage in bulk shall only be as a full load.

Transport by ship, FEm – Emergency sheets (F – Fire, S - Spills):

Proceed in accordance with point 6.

IMDG Code segregation group: 2 Ammonium compounds

### 14.7 Transport in bulk according to Annex II of MARPOL and the IBC Code.

The product is not transported in bulk.

## SECTION 15: REGULATORY INFORMATION.

### 15.1 Safety, health and environmental regulations/legislation specific for the substance.

The product is not affected by the Regulation (EC) No 1005/2009 of the European Parliament and of the Council of 16 September 2009 on substances that deplete the ozone layer.

Product classification according to Annex I of Directive 2012/18/EU (SEVESO III): N/A

The product is not affected by Regulation (EU) No 528/2012 concerning the making available on the market and use of biocidal products.

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The product is not affected by the procedure established Regulation (EU) No 649/2012, concerning the export and import of dangerous chemicals.

Restrictions on the manufacturing, placing on the market and use of certain dangerous substances, mixtures and articles:

Designation of the substance, of the group of substances or of the mixture	Conditions of restriction
58. Ammonium nitrate (AN) CAS No 6484-52-2 EC No 229-347-8	<p>1. Shall not be placed on the market for the first time after 27 June 2010 as a substance, or in mixtures that contain more than 28 % by weight of nitrogen in relation to ammonium nitrate, for use as a solid fertiliser, straight or compound, unless the fertiliser complies with the technical provisions for ammonium nitrate fertilisers of high nitrogen content set out in Annex III to Regulation (EC) No 2003/2003 of the European Parliament and of the Council (10).</p> <p>2. Shall not be placed on the market after 27 June 2010 as a substance, or in mixtures that contain 16 % or more by weight of nitrogen in relation to ammonium nitrate except for supply to:</p> <p>(a) downstream users and distributors, including natural or legal persons licensed or authorised in accordance with Council Directive 93/15/EEC (11);</p> <p>(b) farmers for use in agricultural activities, either full time or part time and not necessarily related to the size of the land area.</p> <p>For the purposes of this subparagraph:</p> <p>(i) 'farmer' shall mean a natural or legal person, or a group of natural or legal persons, whatever legal status is granted to the group and its members by national law, whose holding is situated within Community territory, as referred to in Article 299 of the Treaty, and who exercises an agricultural activity;</p> <p>(ii) 'agricultural activity' shall mean the production, rearing or growing of agricultural products including harvesting, milking, breeding animals and keeping animals for farming purposes, or maintaining the land in good agricultural and environmental condition as established under Article 5 of Council Regulation (EC) No 1782/2003 (12);</p> <p>(c) natural or legal persons engaged in professional activities such as horticulture, plant growing in greenhouses, maintenance of parks, gardens or sport pitches, forestry or other similar activities.</p> <p>3. However, for the restrictions in paragraph 2, Member States may until 1 July 2014, for socioeconomic reasons, apply a limit of up to 20 % by weight of nitrogen in relation to ammonium nitrate for substances and mixtures placed on the market within their territories. They shall inform the Commission and other Member States thereof.</p>

### 15.2 Chemical safety assessment.

No Chemical Safety Assessment has been carried out for this substance/mixture by the supplier.

## SECTION 16: OTHER INFORMATION.

Classification codes:

Eye Irrit. 2 : Eye irritation, Category 2  
Ox. Sol. 3 : Oxidising solid, Category 3

It is advisable to carry out basic training with regard to health and safety at work in order to handle this product correctly.

Abbreviations and acronyms used:

ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road.  
BCF: Bioconcentration factor.

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- CEN: European Committee for Standardization.  
DMEL: Derived Minimal Effect Level, exposure level corresponding to a low risk, that risk should be considered a tolerable minimum.  
DNEL: Derived No Effect Level, level of exposure to the substance below which adverse effects are not anticipated.  
EC50: Half maximal effective concentration.  
PPE: Personal protection equipment.  
IATA: International Air Transport Association.  
ICAO: International Civil Aviation Organization.  
IMDG: International Maritime Code for Dangerous Goods.  
LC50: Lethal concentration, 50%.  
LD50: Lethal dose, 50%.  
Log Pow: Logarithm of the partition octanol-water.  
NOEC: No observed effect concentration.  
PNEC: Predicted No Effect Concentration, concentration of the substance below which adverse effects are not expected in the environmental compartment.  
RID: Regulations Concerning the International Transport of Dangerous Goods by Rail.

Key literature references and sources for data:

<http://eur-lex.europa.eu/homepage.html>

<http://echa.europa.eu/>

Regulation (EU) 2015/830.

Regulation (EC) No 1907/2006.

Regulation (EU) No 1272/2008.

The information given in this Safety Data Sheet has been drafted in accordance with COMMISSION REGULATION (EU) 2015/830 of 28 May 2015 amending Regulation (EC) No 1907/2006 of the European Parliament and of the Council on the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), establishing a European Chemicals Agency, amending Directive 1999/45/EC and repealing Council Regulation (EEC) No 793/93 and Commission Regulation (EC) No 1488/94 as well as Council Directive 76/769/EEC and Commission Directives 91/155/EEC, 93/67/EEC, 93/105/EC and 2000/21/EC.

The information in this Safety Data Sheet on the Preparation is based on current knowledge and on current EC and national laws, as far as the working conditions of the users is beyond our knowledge and control. The product must not be used for purposes other than those that are specified without first having written instructions on how to handle. It is always the responsibility of the user to take the appropriate measures in order to comply with the requirements established by current legislation. The information contained in this Safety Sheet only states a description of the safety requirements for the preparation, and it must not be considered as a guarantee of its properties.