

Safety Data Sheet

According to Commission Regulation (EU) No 2015/830

Issue date 11/07/2013
 Issue 2
 Review date 03/03/2016
 Review 3

Magnesium Nitrate Solution

SECTION 1		Identification of the substance/mixture and of the company/undertaking			
1.1	Product identifier				
	Product commercial name	FERTIBERSOL (Mg – L)			
	Chemical name	Mixture, main ingredient Magnesium Nitrate Hexahydrate			
	Other names	Magnesium Nitrate Solution, 7% N, 9.5% MgO			
	Chemical formula	Mixture, main ingredient Mg(NO ₃) ₂ ·6H ₂ O			
	EU index number (Appendix 1)	Not applicable			
	CE No	Not applicable			
	CAS No.	Not applicable			
	REACH or National product registration number	Not applicable			
1.2	Relevant identified uses of the substance or mixture and uses advised against				
	Identified uses	As a fertiliser and in the manufacture of mixtures.			
	Uses advised against	None			
1.3	Details of the supplier of the safety data sheet				
	Company name	FERTIBERIA. S.A.			
	Company address	Paseo de la Castellana, 259 D. Plantas 47 y 48 - 28046 Madrid			
	Company telephone number	Central: 91.586.62.00; Aviles factory: 985-57.78.50			
	Company email for SDS	reachfertiberia@fertiberia.es			
1.4	Emergency telephone number	Aviles factory: 985-57.78.50			
SECTION 2		Hazards identification			
2.1	Classification of the substance or mixture*	According to Regulation EC 1272/2008 [CLP] Not hazardous.			
2.2	Label elements	Pictograms	Signal word	Hazard statements	Precautionary Statements
2.3	Other hazards				
	PBT/vBvP Criteria	In accordance with appendix XIII of the Regulation (EC) no. 1907/2006, it is not PBT or vPvB since it is an inorganic substance.			
	Other hazards that do not involve product classification				
	Physical and chemical hazards	If involved in a fire this material may release toxic fumes (nitrogen oxides). The resulting solid crystallisation (magnesium nitrate hexahydrate) is not oxidizing. Dehydration of the solid, as a result of intense heat source, presents a risk of fire and explosion on contact with reducing agents.			
	Health hazards	This product is basically harmless when handled correctly. Nevertheless, the following points should be observed: Contact with skin: Effects of overexposure may cause some irritation. Contact with eyes: Splashes in the eyes may cause redness and pain. Ingestion: Small quantities are unlikely to cause toxic effects. In large amounts, it can cause abdominal pain, blue lips or fingernails, bluish skin, confusion, convulsions, dizziness, headache, nausea and loss of consciousness. Inhalation: These solutions are handled cold so the release of gases is unlikely. Inhalation of dust from crystallization may cause sore throat. Long term local effects: Unknown adverse effects. Other: Fire and heating: Inhaling decomposition gases containing nitrogen oxides can cause irritation and have corrosive effects on the respiratory system. These gases may have delayed pulmonary oedema effects.			
	Environmental hazards	Heavy spillage may cause an adverse environmental impact such as eutrophication (developing undesirable flora) in confined surface waters or nitrate contamination. (See section 12).			

* To understand the full meaning of hazard statements (H): see section 16

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SECTION 3								
Composition/information on ingredients								
3.2	Name	% (w/w)	CAS No.	IUPAC	Index No R.1272/2008	REACH Registration Number	Classification Regulation 1272/2008	Specific concentration limits
	Magnesium Nitrate Hexahydrate	Approx. 64%	13446-18-9	Magnesium Dinitrate Hexahydrate	----	01-2119491164-38-0025	Not classified	
	Water	Approx. 36%	7732-18-5			Not required	Not classified	
SECTION 4								
First aid measures								
4.1	Description of first aid measures							
	General	Seek medical attention when necessary.						
	Inhalation	At room temperature there are no hazardous fumes. In case of inhalation of dust from crystallization provide clean air, rest and seek medical attention if necessary.						
	Ingestion	Do not induce vomiting. Rinse the mouth and give water or milk to drink. Seek medical attention if more than a small quantity has been ingested.						
	Contact with skin	Wash the affected area with plenty of water. Remove contaminated clothes and rinse again.						
	Contact with eyes	Wash or rinse the eyes with plenty of water for at least 10 minutes, including behind the eyelids. Remove contact lenses if present and easy to do. Seek medical attention if eye irritation persists.						
4.2	Most important symptoms and effects, both acute and delayed							
		None known						
4.3	Indication of any immediate medical attention and special treatment needed							
		Inhalation of gases, from a fire or thermal decomposition, that contain nitrogen oxides may cause irritation and have corrosive effects on the respiratory system. Administer oxygen, especially if there is blue colouring (methaemoglobin) around the mouth.						
SECTION 5								
Firefighting measures								
5.1	Extinguishing media							
	Suitable extinguishing media	Water.						
	Unsuitable extinguishing media	None						
5.2	Special hazards arising from the substance or mixture							
	Special hazards	There is a potential explosion risk during the fire when the product is strongly confined and/or contaminated with incompatible materials (e.g. organic material, halogen compounds - see section 10) The product must not be allowed to fall into drains.						
	Thermal decomposition or product combustion hazards	Nitrogen and magnesium oxides						
5.3	Advice for firefighters							
	Specific firefighting methods	Open doors and windows in the area to give maximum ventilation. Avoid breathing the smoke (toxic). Position yourself upwind of the fire. Do not contaminate the fertiliser with oils or other combustible materials. Remove containers from fire area if it can be done without risk.						
	Special protective equipment for firefighting	Use self contained breathing apparatus in case of smoke.						
SECTION 6								
Accidental release measures								
6.1	Personal precautions, protective equipment and emergency procedures							
		Avoid contact with eyes, skin and clothing. Keep unnecessary personnel away.						
6.2	Environmental precautions							
		Take care to prevent contamination of soil, 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							
		Stop leakage if possible. Contain spillage by any means available except wood, sawdust or other combustible materials. Any spill of fertilizer must be immediately cleaned up. Recover by pumping up the spill if possible.						
6.4	Reference to other sections							
		See section 1 for contact data, section 8 for PPE and section 13 for waste disposal.						

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SECTION 7		Handling and storage
7.1	Precautions for safe handling	
		Prevent contamination with combustible materials (e.g. gas-oil, greases, etc.) and other incompatible materials. When the product is handled for long periods, use appropriate personal protective equipment, e.g. gloves. Carefully clean the installations before carrying out maintenance and repair operations.
7.2	Conditions for safe storage, including any incompatibilities	
		Place away from sources of heat and flames. Always keep away from combustible materials and substances mentioned in section 10. In the storage area, ensure that strict tidiness and cleanliness standards are complied with.
	Recommended and non-recommended packaging materials	Suitable materials for containers are: stainless steel and synthetic plastics.
7.3	Specific end use(s)	
		See section 1.2 and appendices for exposure scenarios.

Note: stability and reactivity, see section 10

SECTION 8		Exposure controls/personal protection								
8.1	Control parameters									
	Exposure limit values		Component	CAS						
			Magnesium Nitrate	10377-60-3	Not established.					
					Worker		consumer			
				systemic	industrial	professional				
	Derived from the CSR		DNEL	oral	long term	Not applicable	Not applicable	12.5 mg/kg bw/day		
				inhalation	long term	36.7 mg/m ³	36.7 mg/m ³	10.9 mg/m ³		
				dermal	long term	20.8 mg/Kg bw/day	20.8 mg/Kg bw/day	12.5 mg/kg bw/day		
			PNEC	water		air	soil	microbiological	sediment	oral
				fresh water: 0.45 mg/l salt water: 0.045 mg/l in intermittent releases: 4.5 mg/l		Not available	Insufficient data available	18 mg/l	Insufficient data available	Low bioaccumulative potential
8.2	Exposure controls									
	Engineering measures and hygiene controls		Provide plenty of cool running water for flushing in case of contact with skin or eyes. Provide ventilation where necessary. Do not smoke or drink when handling. Wash hands after handling the product and before eating, drinking or smoking. Use the wash basin at the end of the work day.							
	Personal protection measures									
	Eyes		Safety glasses with side shields (EN 166) to prevent eye irritation. If projections are possible use panoramic safety goggles, or full face visor.							
	Skin and body		Work clothes.							
	Hands		Use suitable gloves (for example, rubber or pvc) when handling the product over long periods of time.							
	Respiratory		At room temperature there are no hazardous fumes.							
	Thermal									
	Environmental exposure controls		See section 6.							
	Advice relating to personal protection is valid for high exposure levels.									
	Choose personal protection equipment suitable to exposure risks.									

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SECTION 9		Physical and chemical properties				
9.1	Information on basic physical and chemical properties					
	Aspect	Colourless liquid				
	Colour	Colourless				
	Odour	Odourless				
	Molecular weight	Not applicable				
	pH	pH aqueous solution (50 g/l) approx. 5.				
	Boiling point	Not available				
	Melting point	The solution crystallizes at < -20 °C. Magnesium Nitrate Hexahydrate (solid) melts at 95 °C.				
	Flash-point	Non flammable				
	Flammability	Non flammable				
	Explosive properties	Non-explosive.				
	Auto-ignition temperature	Non flammable				
	Decomposition temperature	Not available				
	Lower explosive limit	Not applicable				
	Upper explosive limit	Not applicable				
	Oxidising properties	Not classified as oxidizing agent.				
	Density at 20 °C	1300 kg/m ³				
	Vapour pressure at 100 °C	Not available				
	Vapour density	Not applicable				
	Partition coefficient n-octanol/water	Not applicable				
	Viscosity	Not available				
	Water solubility	Miscible in all proportions				
9.2	Other information	Molecular weight 256.4 g/mol for the main ingredient (Magnesium Nitrate Hexahydrate)				
SECTION 10		Stability and reactivity				
10.1	Reactivity	Stable under normal conditions of storage, handling and use (see section 7)				
10.2	Chemical stability	Stable under normal conditions of storage, handling and use (see section 7)				
10.3	Possibility of hazardous reactions	When heated it can decompose releasing NOx and Omg.				
10.4	Conditions to avoid	Proximity to sources of heat or fire. Contamination by incompatible materials. Reducing the temperature below the crystallization point. Heating when confined. Welding or heating work of the equipment or plant that may contain fertiliser remnants, without preliminary cleaning to remove the product remnants.				
10.5	Incompatible materials	Inflammable materials, reducing agents, organic matter, acids, alkalis, sulphur, chlorates, chlorides, chromates, nitrites, permanganate, metal powders and metal-containing substances such as copper, nickel, cobalt, zinc and their alloys.				
10.6	Hazardous decomposition products	In case of fire: see Section 5 When strongly heated it decomposes releasing toxic gases (e.g. NOx).				
SECTION 11		Toxicological information				
11.1	Information on toxicological effects					
	Acute toxicity					
	Component	CAS No.	Method	Species	Via	Result
	Magnesium Nitrate Hexahydrate	13446-18-9	OECD 423 OECD 402	rat rat	oral skin respiratory	LD50: > 2,000 mg/Kg bw. LD50: > 5000 mg/Kg bw. Not available
	Skin corrosion/irritation					
	Component	CAS No.	Method	Species	Via	Result
	Magnesium Nitrate Hexahydrate	13446-18-9	OECD 404	Rabbit	skin	Non-irritant.
	Serious eye damage/irritation					
	Component	CAS No.	Method	Species	Via	Result
	Magnesium Nitrate Hexahydrate	13446-18-9	OECD 405	Rabbit	eye	Non-irritant. See test study NOTOX B.V. of 4 May 2011
	Respiratory or skin sensitisation					
	Component	CAS No.	Method	Species	Via	Result
	Magnesium Nitrate Hexahydrate	13446-18-9	OECD 429	mouse	skin	Non-sensitising.
	Germ cell mutagenicity					
	Component	CAS No.	Method	Species	Result	
	Magnesium Nitrate Hexahydrate	13446-18-9	OECD 471 OECD 473 OECD 476	bacteria Chromosomal aberrations mutation in mammal cells	Negative. Non-mutagenic. Ames test. Negative. Non-mutagenic. Negative. Non-mutagenic.	
	Carcinogenicity					
	Component	CAS No.	Method	Species	Via	Result
	Magnesium Nitrate Hexahydrate	13446-18-9				No data

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Reproductive toxicity					
Component	CAS No.	Method	Species	Via	Result
Magnesium Nitrate Hexahydrate	13446-18-9	OECD 422	rat	oral	-Effects on fertility: NOAEL: ≥1500 mg/kg bw/d. -Toxicity for development: NOAEL: ≥1500 mg/kg bw/d
STOT-single exposure and STOT-repeated exposure					
Component	CAS No.	Method	Species	Via	Result
Magnesium Nitrate Hexahydrate	13446-18-9	OECD 422	rat	oral (28 days)	Sub-acute oral route. NOAEL: ≥ 1500 mg/kg body weight/day.
Aspiration hazard		No se conocen efectos significativos o peligros críticos			

SECTION 12 Ecological information

12.1 Toxicity

Water toxicity					
Component	CAS No.	Method	Fish (Poecilia reticulata)	Crustaceans (Daphnia magna)	Algae (benthic diatoms)
Magnesium Nitrate Hexahydrate	13446-18-9	Short term	LC50(96h) = 1378 mg/l (of potassium nitrate).	EC50/LC50 (48h) = 490 mg/l (of potassium nitrate)	LC50/EC50 (10 days) > 1700 mg/l (of potassium nitrate)
		Long term	Not necessary.	Not necessary.	Not available
Land Toxicity					
Component	CAS No.	Macroorganisms	Microorganisms	Land plants	Other organisms
Magnesium Nitrate Hexahydrate	13446-18-9	Not scientifically justified	Not scientifically justified	Not scientifically justified	Not available
Microbiological activity in waste water treatment plants					
Component	CAS No.	Toxicity for aquatic microorganisms			
Magnesium Nitrate Hexahydrate	13446-18-9	CE50/CL50 (180 min) >1000 mg/l (of sodium nitrate)			

12.2 Persistence and degradability

Component	CAS No.	Degradation	
Magnesium Nitrate Hexahydrate	13446-18-9	Hydrolysis	Non-hydrolysable. Test not necessary.
		Photolysis	No information available
		Biodegradation	Not necessary, inorganic substance.

12.3 Bioaccumulative potential

Component	CAS No.	Octanol-water partition coefficient (Kow)	Bioconcentration factor (BCF)	Comments
Magnesium Nitrate Hexahydrate	13446-18-9	Not applicable. Inorganic substance.	-	

12.4 Mobility in soil

Component	CAS No.	Result
Magnesium Nitrate Hexahydrate	13446-18-9	low absorption potential (based on its properties)

12.5 Results of PBT and vPvB assessment

Not required. Inorganic substance. See REACH appendix XIII.

12.6 Other adverse effects

No more information.

SECTION 13 Disposal considerations

13.1 Waste treatment methods

Depending on the degree and nature of contamination, dispose of it as fertilizer on the field or as raw material. Empty containers by shaking them to remove as much as possible of their content. If approved by the local authorities, empty packaging can be disposed of as a non-hazardous material or returned for recycling.

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SECTION 14 Transport Information								
14.1 - 14.6	Regulatory Information	UN Number	Proper shipping name	Class	Packing group	Label	Environmental hazards	Special precautions for users
	ADR/RID ADNR IMDG IATA						NOT CLASSIFIED	
14.7	<i>Transport in bulk according to Annex II of MARPOL and the IBC Code: Not applicable</i>							

SECTION 15 regulatory information	
15.1	Safety, health and environmental regulations and legislation specific for the substance or mixture
	Regulation 2003/2003 (fertilisers) Regulation 1907/2006 (REACH), Entry 58 of appendix XVII. Regulation 1272/2008 (CLP) R.D. 506/2013 (fertilizers) R.D. 374/2001 (Chemical agents)
15.2	Chemical Safety Assessment
	Assessment of Chemical Safety carried out for the main ingredient, Magnesium Nitrate Hexahydrate and Anhydrous Magnesium Nitrate.

SECTION 16 Other information		
	Hazard statements	None
	Precautionary statements	None
	Bibliographical references and data sources	Chemical Safety Assessment for Magnesium Nitrate Hexahydrate and Anhydrous Magnesium Nitrate; Guidance documents EFMA/FERTILIZER EUROPE; Data for TFI HPV; NOTOX Not classified as "eye irritant" based on negative results obtained in tests conducted by NOTOX B.V. of 4 May 2011. (Acute eye irritation/corrosion study with Magnesium nitrate hexahydrate in the rabbit).
	Abbreviations and acronyms	ELV-DE: Environmental limit value (daily exposure) ELV-ST Environmental limit value (short term) NOAEL: No observable adverse effect level LD50: Lethal dose 50% LC50: Lethal concentration 50% EC50: Effective concentration 50% DNEL: Derived no effect level PNEC: Predicted no effect concentration LOEC: Lowest observed effect concentration NOEC: No observed effect concentration NOAEC: No observed adverse effect concentration
	Adequate training for workers	Obligatory training in occupational risk prevention
	Date of prior SDS	Version 2 dated 11.07.13
	Modifications made to present revision	Change of Registration Number. Adaptation to the Commission Regulation (EU) No 2015/830.

The information contained in this Safety Data Sheet is given in good faith. It is accurate to the best of our knowledge and belief and represents the most up to date information about the product at the time of publication. The information given in this data sheet does not constitute or replace the user's own assessment of workplace risks as required by other health and safety legislation.