SAFETY DATA SHEET

In accordance with Commission Regulation (EU) No. 453/2010

Date of edition	12/02/2021	**Edition**	1
Date of review	16/03/2021	**Review**	1

Proroot®-L

1 Identification of the substance/mixture and of the company/undertaking

1.1	**Commercial name of the product**	**Proroot®-L**
	Chemical name	*Not available*
	Synonyms	Not available
	Chemical formula	Not available
	EU-index number (Annex 1)	Not available
	CE No	Not available
	CAS No.	Not available
	REACH Registration Number	Not available
1.2	**Use of the substance/preparation**	Liquid NPK complex fertilizer root promoter. Agricultural use in dilution.
1.3	**Company name**	Mirat Fertilizantes s.l.u
	Company address	Avenida aldehuela, 10 Bajo 37003, Salamanca, España.
	Company Phone	+34 92 310 30 14
	Company e-mail	vitaterra@mira.net
1.4	**Emergency telephone**	Spain. National Institute of Toxicology +34 91 562 04 20

2 Hazards identification

2.1	**Classification**	***Not classified as hazardous***
2.2	**Label elements**	
2.2	**According to Regulation 1272/2008**	

Pictograms	Word of caution	Indications of danger	Cautionary advice
N.A.	N.A.	N.A.	P101, P102, P103, P264, P270, P301+P330+P331, P411, P501.

2.3 **Other hazards**

*** For the full meaning of R-phrases and/or hazard statements (H): see section 16.**

3 Composition/information on ingredients

Name	%p/p	Nº CAS	CLASSIFICATION R. 1272/2008
Monoammonium phosphate	19,20 %	7722-76-1	Not classified as hazardous
Urea	6,00 %	57-13-6	Not classified as hazardous
Free amino acids	3,25 %	ND	Not classified as hazardous
Dipotassium phosphate	0.01%	04/11/7758	Not classified as hazardous
Water	71,54 %	7732-18-5	Not classified as hazardous

May contain other substances in such quantities that they do not affect the classification of the product:

Not Applicable

4 First aid measures

4.1 **Description of first aid measures**

Inhalation	Remove the person from the place of the accident and take him/her to a ventilated place, place the victim at rest.
Ingestion	If the product has been swallowed and the person is conscious, rinse mouth. Do not induce vomiting and seek medical attention.
Skin contact	Remove contaminated clothing and wash exposed skin areas with mild soap and plenty of water for 5 - 10 minutes. If discomfort exists, consult a physician.
Eye contact	Remove contact lenses if necessary and rinse immediately with plenty of water for 5 - 10 minutes. If there is discomfort, consult a doctor.

4.2 **Main symptoms and effects**

Skin	May cause itching, redness and irritation.
Eyes	Eye itching and discomfort, redness.
Ingestion	Possible mild to moderate digestive tract involvement, decreased absorption of other metals which may lead to stomach disorders such as diarrhea, weakness, kidney damage, muscle cramps, bone marrow depression and a generalized allergic reaction.
Inhalation	If inhaled it may cause itching and discomfort of the respiratory mucous membranes.

4.3 **Indication of all medical care and special treatments**

There is no specific antidote. In case of accident follow the indications indicated above. Show this safety data sheet and recommend symptomatic treatment.

5 Firefighting measures

5.1	**Extinguishing media**	Recommended: Use water spray, carbon dioxide (CO_2), foam or dry powder, taking into account other substances and products stored.
	Extinguishing media NOT to use	Direct waterjet
5.2	**Special hazards**	In case of combustion or thermal degradation, toxic gases may be produced from the containers. Fire residues and contaminated extension water should be disposed of according to local regulations.
5.3	**Advice for firefighters**	In case of fire in the surroundings, follow the indications below: 1-High temperatures may result in high pressures inside closed containers. 2-Avoid inhalation of fumes or vapors generated. Use suitable respiratory equipment. 3-Do not allow spills from fire extinguishing to flow into drains or watercourses.
	Special protection in firefighting	Firefighters should wear appropriate protective equipment and self-contained breathing apparatus with a full face mask operating in positive pressure mode. Firefighter clothing (including helmets, gloves and protective boots) conforming to European standard EN 469 provides a basic level of protection in the event of a chemical incident.

6 Accidental release measure

6.1	**Personal precautions, protective equipment and emergency procedures**	Restrict access area, do not touch or walk through spilled material, stop leak if it can be done without risk. Wear work clothes and shoes when using or handling this product. Protective side shields, plastic gloves, rubber aprons should be worn. Operators should be instructed in the use of safety equipment.
6.2	**Environmental precautions**	Prevent the product from reaching the sewage system. Avoid soil contamination.
6.3	**Methods and material for containment and cleaning up**	Use inorganic, inert, non-combustible absorbent material. Collect the material for disposal and place it in a clean and dry container for disposal, according to the required legislations. Wash the area with water and detergent.
6.4	**Reference to other sections**	Note: see section 8 for personal protective equipment and section 13 for waste disposal.

7 Handling and storage

7.1	**Precautions for safe handling**	Use personal protective equipment, avoiding contact with skin, eyes and clothing. Ensure adequate ventilation. Do not eat, smoke or drink while handling the product. Wash hands after handling the product and before eating, drinking or smoking. Remove clothing immediately if product gets inside and/or comes in contact with the product. Wash hands and skin thoroughly after handling.
7.2	**Conditions for safe storage, including any incompatibilities**	Keep the product in the original container tightly closed, in a cool, ventilated and covered place. Store according to local / national regulations, observing the precautions indicated on the labeling.

	Recommended packaging materials	HDPE (High Density Polyethylene) plastic containers
7.3	**Specific end use(s)**	Agriculture EC Fertilizer

Note: stability and reactivity, see Section 10.

8 Exposure controls/personal protection

8,1

Exposure limit values	**Time-weighted average (TWA)**	Monoammonium phosphate	Not available
		Urea	Not available
		Free amino acids	Not available
		Dipotassium phosphate	Not available
		Water	Not available

ISQ derived	**DNEL**		**Industrial**	**Consumer**
		Oral		
		Monoammonium phosphate	Not available	Not available
		Urea	Not available	Not available
		Free amino acids	Not available	Not available
		Dipotassium phosphate	Not available	Not available
		Water	Not available	Not available
		Inhalatory		
		Monoammonium phosphate	Not available	Not available
		Urea	Not available	Not available
		Free amino acids	Not available	Not available
		Dipotassium phosphate	Not available	Not available
		Water	Not available	Not available
		Dermal		
		Monoammonium phosphate	Not available	Not available
		Urea	Not available	Not available
		Free amino acids	Not available	Not available
		Dipotassium phosphate	Not available	Not available
		Water	Not available	Not available

ISQ derived	**PNEC**	**Water**	**Air**	**Soil**	**Microbiological**	**Sediment**	**Oral**
		Monoammonium phosphate	Not available	Not available	Not available	Not available	Not available	0
		Urea	Not available	Not available	Not available	Not available	Not available	Not available
		Free amino acids	Not available	Not available	Not available	Not available	Not available	Not available
		Dipotassium phosphate	Not available	Not available	Not available	Not available	Not available	Not available
		Water	Not available	Not available	Not available	Not available	Not available	Not available

8.2	**Exposure controls**	If necessary, use local extractors
	Hygienic controls	It is recommended to handle the product in a ventilated place.
	Individual protection	Personal protective equipment: Use personal protective equipment according to Directive 89/686/EEC.
	Eyes	In general, safety glasses with side shields are recommended to protect against liquid splashes.
	Skin and body	Avoid contact with skin. The use of gloves is recommended.
	Respiratory	In case of insufficient ventilation, use suitable respiratory equipment.
	Control de la exposición del medio ambiente	Do not discharge into running water or sewage system.

Choose personal protection adapted to the risks of exposure.

9 Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance	Liquid fluid
Color	Brown
Odor	Characteristic
Dilution pH	4,0- 5,0
Melting point	Not applicable
Boiling point	Not available
Flash point	Not available
Evaporation rate	Not available
Flammability	Not available
Explosive properties	Not explosive
Upper/lower flammability limits	Not available
Vapor pressure	Not available
Vapor density	Not available
Relative density	1,01 ± 0,05 g/cc
Solubility	Soluble in water
Partition coefficient n-octanol/water	Not available
Auto-ignition temperature	Not available
Decomposition temperature	Not available
Viscosity	Not applicable
Explosive properties	Not applicable

10 Stability and reactivity

10.1	**Reactivity**	Stable under normal handling and storage conditions
10.2	**Chemical stability**	Stable under normal handling and storage conditions
10.3	**Possibility of hazardous reactions**	No known hazardous reactions under normal process conditions.
10.4	**Conditions to avoid**	Heat, flames and other sources of ignition.
10.5	**Incompatible materials**	Acids, oxidizing minerals, strong reducing or oxidizing agents.
10.6	**Hazardous decomposition products**	Carbon monoxide and unidentified organic compounds may be formed during the process.

11 Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Component	**Nº CAS**	**Method**	**Species**	**Via**	**Result**
Monoammonium phosphate	7722-76-1	Not available	Rat	Oral	DL50: 2.000 mg/kg
Urea	57-13-6	Not available	Rat	Oral	DL50: 8.471 mg/kg

Free amino acids	ND	Not available	Not available	Not available	Not available
Dipotassium phosphate	04/11/7758	Not available	Not available	Not available	Not available
Water	7732-18-5	Not available	Not available	Not available	Not available

Corrosion / skin irritation

Component	Nº CAS	Method	Species	Via	Result
Monoammonium phosphate	7722-76-1	Not available	Rat	Dermal	DL50: 2.000 mg/kg
Urea	57-13-6	Not available	Not available	Not available	Not available
Free amino acids	ND	Not available	Not available	Not available	Not available
Dipotassium phosphate	04/11/7758	Not available	Not available	Not available	Not available
Water	7732-18-5	Not available	Not available	Not available	Not available

Severe eye injury/irritation

Component	Nº CAS	Method	Species	Via	Result
Monoammonium phosphate	7722-76-1	Not available	Not available	Not available	Not available
Urea	57-13-6	Not available	Not available	Not available	Not available
Free amino acids	ND	Not available	Not available	Not available	Not available
Dipotassium phosphate	04/11/7758	Not available	Not available	Not available	Not available
Water	7732-18-5	Not available	No disponible	Not available	Not available

Respiratory system or skin sensitization

Component	Nº CAS	Method	Species	Via	Result
Monoammonium phosphate	7722-76-1	Not available	Not available	Not available	Not available
Urea	57-13-6	Not available	Not available	Not available	Not available
Free amino acids	ND	Not available	Not available	Not available	Not available
Dipotassium phosphate	04/11/7758	Not available	Not available	Not available	Not available
Water	7732-18-5	Not available	No disponible	Not available	Not available

Carcinogenicity

Component	Nº CAS	Method	Species	Via	Result
Monoammonium phosphate	7722-76-1	Not available	Not available	Not available	Not available
Urea	57-13-6	Not available	Not available	Not available	Not available
Free amino acids	ND	Not available	Not available	Not available	Not available
Dipotassium phosphate	04/11/7758	Not available	Not available	Not available	Not available
Water	7732-18-5	Not available	No disponible	Not available	Not available

Mutagenicity in germ cells

Component	Nº CAS	Method	Species	Via	Result
Monoammonium phosphate	7722-76-1	Not available	Not available	Not available	Not available
Urea	57-13-6	Not available	Not available	Not available	Not available
Free amino acids	ND	Not available	Not available	Not available	Not available
Dipotassium phosphate	04/11/7758	Not available	Not available	Not available	Not available
Water	7732-18-5	Not available	No disponible	Not available	Not available

Reproductive toxicity

Component	Nº CAS	Method	Species	Via	Result
Monoammonium phosphate	7722-76-1	Not available	Not available	Not available	Not available
Urea	57-13-6	Not available	Not available	Not available	Not available
Free amino acids	ND	Not available	Not available	Not available	Not available
Dipotassium phosphate	04/11/7758	Not available	Not available	Not available	Not available
Water	7732-18-5	Not available	No disponible	Not available	Not available

Specific target organ toxicity (STOT) - single exposure

Component	Nº CAS	Method	Species	Via	Result

Monoammonium phosphate	7722-76-1	Not available	Not available	Not available	Not available
Urea	57-13-6	Not available	Not available	Not available	Not available
Free amino acids	ND	Not available	Not available	Not available	Not available
Dipotassium phosphate	04/11/7758	Not available	Not available	Not available	Not available
Water	7732-18-5	Not available	No disponible	Not available	Not available

Specific target organ toxicity (STOT) - repeated exposure

Component	Nº CAS	Method	Species	Via	Result
Monoammonium phosphate	7722-76-1	Not available	Not available	Not available	Not available
Urea	57-13-6	Not available	Not available	Not available	Not available
Free amino acids	ND	Not available	Not available	Not available	Not available
Dipotassium phosphate	04/11/7758	Not available	Not available	Not available	Not available
Water	7732-18-5	Not available	No disponible	Not available	Not available

Aspiration hazard

Component	Nº CAS	Method	Species	Via	Result
Monoammonium phosphate	7722-76-1	Not available	Not available	Not available	Not available
Urea	57-13-6	Not available	Not available	Not available	Not available
Free amino acids	ND	Not available	Not available	Not available	Not available
Dipotassium phosphate	04/11/7758	Not available	Not available	Not available	Not available
Water	7732-18-5	Not available	No disponible	Not available	Not available

12 Ecological information

12.1 Toxicity

Aquatic toxicity

Component	Nº CAS	Fish	Crustaceans	Algae
Monoammonium phosphate	7722-76-1	CEL50: 85,9 mg/L 96 h	CE50: 1.790 mg/L (Daphnia magna) 48 h	CEr50: 100 mg/L 72 h
Urea	57-13-6	CEL50: 17.500 mg/L 96h	CE50: 3.910 mg/L (Daphnia magna) 48 h	Not available
Free amino acids	ND	Not available	Not available	Not available
Dipotassium phosphate	04/11/7758	Not available	Not available	Not available
Water	7732-18-5	Not available	Not available	Not available

Terrestrial Toxicity

Component	Nº CAS	Macroorganisms	Microorganisms	Other organisms
Monoammonium phosphate	7722-76-1	Not available	Not available	Not available
Urea	57-13-6	Not available	Not available	Not available
Free amino acids	ND	Not available	Not available	Not available
Dipotassium phosphate	04/11/7758	Not available	Not available	Not available
Water	7732-18-5	Not available	Not available	Not available

Microbiological activity in wastewater treatment plants

Component	Nº CAS	Toxicity to aquatic microorganisms
Monoammonium phosphate	7722-76-1	Not available
Urea	57-13-6	Not available
Free amino acids	ND	Not available
Dipotassium phosphate	04/11/7758	Not available
Water	7732-18-5	Not available

12.2 Persistence and degradability

Component	Nº CAS	Aquatic life	Photolysis	Biodegradability
Monoammonium phosphate	7722-76-1	Not available	Not available	Not available
Urea	57-13-6	Not available	Not available	Not available
Free amino acids	ND	Not available	Not available	Not available
Dipotassium phosphate	04/11/7758	Not available	Not available	Not available
Water	7732-18-5	Not available	Not available	Not available

12.3 Potencial de bioacumulación

Component	Nº CAS	Octanol-water partition coefficient (Kow)	Bioconcentration factor (BCF)	Bioaccumulation potential
Monoammonium phosphate	7722-76-1	Not available	Not available	Not available
Urea	57-13-6	Not available	Not available	Not available
Free amino acids	ND	Not available	Not available	Not available
Dipotassium phosphate	04/11/7758	Not available	Not available	Not available
Water	7732-18-5	Not available	Not available	Not available

12.4 Mobility on the ground

Component	Nº CAS	Result	
Monoammonium phosphate	7722-76-1	Adsorption	Not available

Monoammonium phosphate	7722-76-1	**Volatilization**	Not available
Urea	57-13-6	**Adsorption**	Not available
		Volatilization	Not available
Free amino acids	ND	**Adsorption**	Not available
		Volatilization	Not available
Dipotassium phosphate	04/11/7758	**Adsorption**	Not available
		Volatilization	Not available
Water	7732-18-5	**Adsorption**	Not available
		Volatilization	Not available

12.5 Results of PBT and vPvB assessment

Not determined

12.6 Other adverse effects

N.A.

13 Disposal considerations

13.1 Waste treatment methods

Packaging/containers: Containers with product residues should be disposed of as non-hazardous organic waste. Dilute and neutralize product residues. Empty waste at appropriate facilities.
Disposal conditions: Dispose of product residues and its containers with all possible precautions and in accordance with local and national regulations in force.

14 Transport information

14.1 - 14.6 Información Reglamentaria	ONU Number	Proper shipping name	Class	Packing group	Environmental hazards	Special precautions for users
International carriage of dangerous goods by road (ADR)	Not applicable	Not classified as hazardous material for transport within the transport regulations				
Maritime Transportation (IMDG)	Not applicable	Not classified as hazardous material for transport within the transport regulations				
Air transportation (ICAO/IATA)	Not applicable	Not classified as hazardous material for transport within the transport regulations				

14.7 ***Transport in bulk according to Marpol 73/78 Annex II and IBC Code: Not applicable.***

15 Regulatory information

15.1 Safety, health and environmental regulations and legislation specific to the substance or mixture

Fertilizer Regulation 2003/2003

R.D. 824/2005

Regulation 1907/2006 (REACH)

Regulation 1272/2008 (CLP)

15.2 Chemical Safety Assessment

No data available

16 Other information

Hazard statements	N.A.
Cautionary advice	P101: If medical advice is needed, have product container or label at hand. P102: Keep out of reach of children. P264: Wear protective gloves/protective clothing/eye protection/face protection. P270: Do not eat, drink or smoke when using this product. P301+P330+P331: IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.. P411: Store at temperatures not exceeding 35C. P501: Dispose of contents according to your local laws
Bibliographic references and data sources	Chemical Safety Report of the substance. EFMA/FERTILIZER EUROPE Guidance Documents.
Abbreviations and acronyms	NA: Not applicable MMAD: Mean Mass Aerodynamic Diameter VLA-ED: environmental limit value (daily exposure) VLA-EC: environmental limit value (short duration) NOAEL: doses with no observed adverse effects DL50: 50% lethal dose CL50: 50% lethal concentration CE50: 50% effective concentration DNEL: concentration without derivative effect PNEC: expected concentration with no effect LOEC: lowest observed effect concentration NOEC: non observed effect concentrated NOAEC: non observed adverse effects concentrated
Adequate training for workers	Mandatory training in Occupational Risk Prevention.
Modifications introduced in the current revision	Adaptation to Regulation 453/2010

Annexes to the Safety Data Sheet Proroot®-L
Exposure Scenario 1

1	**Title of the Exposure Scenario**	
	Professional use as fertilizer	
2	**Description of the activities or processes covered by the exposure scenario.**	
	Sector of Use (SU)	SU 22: Professional uses: Public sector (administration, education, entertainment, services, crafts, etc.)
	Product Category (PC)	PC 12: Fertilizers
	Process Category (PROC)	PROC 2: Use in closed and continuous processes with occasional controlled exposure PROC 8a: Transfer of substances or preparations (loading/unloading) to or from ships or large containers in non-specialized installations PROC 8b: Transfer of substances or preparations (loading/unloading) to or from ships or large containers in dedicated facilities PROC 9: Transfer of substances or preparations in small containers (dedicated filling lines, including weighing) PROC 13: Processing of articles by dipping and pouring PROC 19: Manual mixing with close contact and use of only personal protective equipment
	Article Category (AC)	Basic Substance
	Environmental Emission Category (ERC)	ERC 8b: Indoor wide dispersive use of reactive substances in open systems ERC 8d: Extensive external dispersive use of processing aids in open systems ERC 8e: Extensive external dispersive use of reactive substances in open systems ERC 8e: Extensive external dispersive use of reactive substances in open systems
3	**Operating conditions (worst case)**	
3.1	**Operating conditions relating to use**	
	Duration and frequency	> 4 hours per day
3.2	**Substance-related operating conditions**	
	Physical form	Liquid (solutions)
	Volatility	Low
	Substance concentration	>30 % (liquid)
3.3	**Other operating conditions that determine exposure**	
	The activity can be carried out both indoors and outdoors.	
4	**Risk management measures**	
4.1	**Measures relating to workers**	Wear safety glasses Good ventilation conditions Wear gloves Proper containment of the substance Minimize the number of exposed personnel Use effective contaminant extraction systems Minimize manual handling Avoid contact with contaminated objects and instruments Regular cleaning of work area and equipment Monitoring of the site to ensure that risk management measures are being implemented Training of personnel on good practices Maintain standard conditions of personal hygiene Information with Safety Data Sheet
4.2	**Measures relating to consumers**	Not applicable
4.3	**Environmental measures**	Not available
4.4	**Measures relating to waste**	Not available
5	**Estimated exposure under the conditions described.**	
5.1	**Worker exposure**	
	If risk management measures are applied, exposure to the substance is not expected.	
5.2	**Consumer exposure**	
	Not applicable	
5.3	**Indirect exposure of people through the environment**	
	Not available	
5.4	**Environmental exposure**	
	Not implemented	
6	**Information for the downstream user to evaluate operating conditions**	
	Not relevant	

Annexes to the Safety Data Sheet Proroot®-L
Exposure Scenario 2

1	**Title of the Exposure Scenario**	
	End use as an agricultural commodity by consumers	
2	**Description of the activities or processes covered by the exposure scenario.**	
	Sector of Use (SU)	SU 21: Uses by consumers: Private residences (general public or consumers)
	Product Category (PC)	PC 12: Fertilizers
	Process Category (PROC)	Not available
	Article Category (AC)	Not available
	Environmental Emission Category (ERC)	ERC 8b: Broad indoor dispersive use of reactive substances in open systems ERC 8e: Extensive outdoor dispersive use of reactive substances in open systems
3	**Operating conditions (worst case)**	
3.1	**Operating conditions relating to use**	
	Duration and frequency	Not relevant
3.2	**Substance-related operating conditions**	
	Physical form	Liquid (solutions)
	Substance concentration	<1,0 % (p/p)
3.3	**Other operating conditions that determine exposure**	
	Activity carried out both indoors and outdoors	
4	**Risk management measures**	
4.1	**Measures relating to workers**	Not applicable

4.2	**Measures relating to consumers**	Wear safety glasses Avoid splashes Apply downwind Read the product label
4.3	**Environmental measures**	Environmentally safe
4.4	**Measures relating to waste**	Manage waste according to local regulations.

5	**Estimated exposure under the conditions described.**
5.1	**Worker exposure**
	Not applicable
5.2	**Consumer exposure**
	If operating conditions and risk management measures are applied, exposure is not expected to occur.
5.3	**Indirect exposure of people through the environment**
	Not available
5.4	**Environmental exposure**
	Not relevant

6	**Information for the downstream user to evaluate operating conditions**
	Not relevant