SAFETY DATA SHEET ACCORDING TO 1907/2006/EC, 453/2010/EU, 2015/830/EU (REACH)

1ST SEED EMERALD

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

1.1 Product Identifier

Product Name : 1ST SEED EMERALD
Product description : Fertiliser, seed treatment
Product Type : Suspension Concentrate

1.2 Relevant identified uses of the substance or mixture and uses advised against

Relevant uses: Fertiliser
Uses advised against: All uses not specified in this section or in section 7.3

1.3 Details of the supplier of the safety data sheet

Rolfes Agri (Pty) Ltd
288 Mundt Street
Waltloo
Pretoria
South Africa
Tel: +27(0)12 803 0145
Fax: +27(0)12 803 8418

1.4 Emergency telephone number

National advisory body/Poison Centre

Telephone number : SOUTH AFRICA
Griffon Poison Information Centre
(24 Hour Poisoning Emergency Helpline)
+27(0)82 446 8946

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture:
CLP Regulation (EC) no 1272/2008:

Acute Tox.4: Acute toxicity (oral), Category 4, H302
Acute Tox. 4: Acute toxicity (inhaled), Category 4, H332
Aquatic Acute 1: Aquatic Acute, Category 1, H400
Aquatic Chronic 1: Aquatic Chronic, Category 1, H410

2.2 Label elements
CLP Regulation (EC) no 1272/2008:

Hazard pictogram(s) :

Signal word : Warning
Hazard statement(s) : H302 Harmful if swallowed
H332 Harmful if inhaled
H410 Very toxic to aquatic life with long lasting effects.

Precautionary statement(s) :

P101 - If medical advice is needed, have product container or label at hand.
P102 - Keep out of reach of children.
P103 - Read label before use.
P261 - Avoid breathing dust/fume/gas/mist/vapours/spray.
P264 - Wash hands thoroughly after handling
P270 - Do not eat, drink or smoke when using this product.
P271 - Use only outdoors or in a well-ventilated area.
P273 - Avoid release to the environment.
P312 - Call a POISON CENTER or doctor/physician if you feel unwell.
P330 - Rinse mouth.
P301+P312 - IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell
P304+P340 - IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P391 - Collect spillage
P501 - Dispose of the contents/containers in accordance with the current legislation on waste treatment.

2.3 Other hazards: Non-applicable

SECTION 3: Composition/information on ingredients

3.1 Substance:
Non-applicable

3.2 Mixture:
Chemical description: Multi-Constituent Substance
Components:

Chemical Name:	Zinc phosphate/ Trizinc bis (orthophosphate)
CAS:	7779-90-0
EC:	231-944-3
Index:	Non-applicable
REACH:	Non-applicable
Concentration:	< 25 %

Chemical Name:	Copper Oxychloride
CAS:	1332-40-7
EC:	603-724-0
Index:	Non-applicable
REACH:	Non-applicable
Concentration:	< 2 %

SECTION 4: First Aid Measures

4.1 Description of first aid measures

The symptoms resulting from intoxication can appear after exposure, therefore, in case of doubt, seek medical attention for direct exposure to the chemical product or persistent discomfort, showing the SDS of this product.

By inhalation:
This product contains substances classified as hazardous for inhalation, in case of symptoms of intoxication remove the person affected from the exposure area and provide with fresh air. Seek medical attention if the symptoms get worse or persist.

By skin contact:
In case of contact it is recommended to clean the affected area thoroughly with water and neutral soap. In case of modifications on the skin (stinging, redness, rashes, blisters) seek medical advice with this Safety data Sheet.

By eye contact:
This product does not contain substances classified as hazardous for eye contact. Rinse eyes thoroughly for at least 15 minutes with lukewarm water, ensuring that the person affected does not rub or close their eyes.

By ingestion / aspiration:
Do not induce vomiting, but if it does happen keep the head down to avoid aspiration. Keep the person affected at rest. Rinse out the mouth and throat, as they may have been affected during ingestion.

4.2 Most important symptoms and effects, both acute and delayed

Acute and delayed effects are indicated in sections 2 and 11.

4.3 Indication of any immediate medical attention and special treatment needed

Notes to physician: In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.

Specific treatments: No specific treatment.

SECTION 5: Firefighting measures

5.1 Fire Extinguishing Media

Suitable extinguishing media:
Use any means suitable for extinguishing surrounding fire.

Unsuitable extinguishing media:
None known.

5.2 Special hazards arising from the substance or mixture

Hazards from the substance or mixture:
Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain.

As a result of combustion or thermal decomposition reactive sub-products are created that can become highly toxic and, consequently, can present a serious health risk

5.3 Additional provisions:
Act in accordance with the Internal Emergency Plan and the Information Sheets on actions to take after an accident or other emergencies. Destroy any source of ignition. In case of fire, refrigerate the storage containers and tanks for products susceptible to inflammation, explosion or BLEVE as a result of high temperatures. Avoid spillage of the products used to extinguish the fire into an aqueous medium.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures:
Isolate leaks provided that there is no additional risk for the people performing the task. Personal protection equipment must be used against potential contact with the spilt product (see section 8). Evacuate the area and keep out those who do not have protection.

6.2 Environmental precautions:
Avoid at all cost ant type of spillage into an aqueous medium. Contain the product absorbed appropriately in hermetically sealed containers.
The zinc phosphate substance is classified as very toxic to aquatic life Acute Category 1 and Chronic Category: Very toxic to aquatic life with long lasting effects

6.3 Methods and materials for containment and cleaning up
Absorb the spillage using sand, saw dust or inert absorbent and move it to a safe place. For any concern related to disposal consult section 13.

6.4 Reference to other sections:
See Section 1 for emergency contact information.
See Section 8 for information on appropriate personal protective equipment.
See Section 13 for additional waste treatment information.

SECTION 7: Handling and storage

7.1 Precautions for safe handling:

A. Precautions for safe manipulation
Comply with the current legislation concerning the prevention of industrial risks. Keep containers hermetically sealed. Control spills and residues, destroying them with safe methods (section 6). Avoid leakages from the container. Maintain order and cleanliness where dangerous products are used.

B. Technical recommendations for the prevention of fires and explosions
Due to its non-flammable nature, the product does not present a fire risk under normal conditions of storage, manipulation and use.

C. Technical recommendations to prevent ergonomic and toxicological risks
Do not eat or drink during the process, washing hands afterwards with suitable cleaning products.

D. Technical recommendations to prevent environmental risks
It is recommended to have absorbent material available at close proximity to the product (See subsection 6.3)

7.2 Conditions for safe storage, including any incompatibilities:

A. Technical measures for storage
Minimum Temp.: 5 ºC
Maximum Temp.: 30 ºC
Maximum time: 36 Months

B. General conditions for storage
Avoid sources of heat, radiation, static electricity and contact with food. For additional information see subsection 10.5

7.3 Specific end use(s)
Except for the instructions already specified it is not necessary to provide any special recommendation regarding the uses of this product.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters
Substances whose occupational exposure limits have to be monitored in the work environment. There are no occupational exposure limits for the substances contained in the product

DNEL (Workers):

Zinc phosphate/ Trizinc bis (orthophosphate)		
DNEL Type	**Value**	**Remark**
Acute – dermal, local effects	No data available	None
Long-Term – dermal, local effects	No data available	None
Long-Term – dermal, systemic effects	83 mg/kg	None
Acute – inhalation, local effects	No data available	None
Acute – inhalation, systemic effects	No data available	None
Long-Term – inhalation, local effects	No data available	None
Long-Term – inhalation, systemic effects	5 mg/m3	None

Copper Oxychloride		
DNEL Type	**Value**	**Remark**
Acute – dermal, local effects	No data available	None
Long-Term – dermal, local effects	No data available	None
Long-Term – dermal, systemic effects	No data available	None
Acute – inhalation, local effects	No data available	None
Acute – inhalation, systemic effects	No data available	None
Long-Term – inhalation, local effects	No data available	None
Long-Term – inhalation, systemic effects	No data available	None

DNEL (Consumer / General Population):

Zinc phosphate/ Trizinc bis (orthophosphate)		
DNEL Type	**Value**	**Remark**
Long-term – oral, systemic effects	0.83 mg/kg	None
Acute – dermal, local effects	No data available	None
Long-Term – dermal, local effects	No data available	None
Long-Term – dermal, systemic effects	83 mg/kg	None
Acute – inhalation, local effects	No data available	None
Acute – inhalation, systemic effects	No data available	None
Long-Term – inhalation, local effects	No data available	None
Long-Term – inhalation, systemic effects	2.5 mg/m3	None

Copper Oxychloride		
DNEL Type	**Value**	**Remark**
Long-term – oral, systemic effects	No data available	None
Acute – dermal, local effects	No data available	None
Long-Term – dermal, local effects	No data available	None
Long-Term – dermal, systemic effects	No data available	None
Acute – inhalation, local effects	No data available	None
Acute – inhalation, systemic effects	No data available	None
Long-Term – inhalation, local effects	No data available	None
Long-Term – inhalation, systemic effects	No data available	None

PNEC:

Zinc phosphate/ Trizinc bis (orthophosphate)		
PNEC Type	**Value**	**Remark**
PNEC aquatic, freshwater	0.0206 mg/L	None
PNEC aquatic, marine water	0.0061 mg/L	None
PNEC aquatic, intermittent release	No data available	None
PNEC sediment, freshwater	117.8 mg/kg	None
PNEC sediment, marine water	56.5 mg/kg	None
PNEC soil	35.6 mg/kg	None
PNEC sewage treatment plant	0.1 mg/L	None
PNEC oral	No data available	None

Copper Oxychloride		
PNEC Type	**Value**	**Remark**
PNEC aquatic, freshwater	No data available	None
PNEC aquatic, marine water	No data available	None
PNEC aquatic, intermittent release	No data available	None
PNEC sediment, freshwater	No data available	None
PNEC sediment, marine water	No data available	None
PNEC soil	No data available	None
PNEC sewage treatment plant	No data available	None
PNEC oral	No data available	None

8.2 Exposure controls

Appropriate engineering controls:
No special ventilation requirements. Good general ventilation should be sufficient to control worker exposure to airborne contaminants.

Individual protection measures

Hygiene measures:
Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period.

Eye/face protection:
Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. Possible: safety glasses with side-shields

Skin protection

Hand protection:
Protective gloves against minor risks.

Body protection:
Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Other skin protection:
Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Respiratory protection:
Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator. Use a properly fitted, particulate filter respirator complying with an approved standard if a risk assessment indicates this is necessary.

Environmental exposure controls:
In accordance with the community legislation for the protection of the environment it is recommended to avoid environmental spillage of both the product and its container. For additional information see subsection 7.1.D

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance

Physical state	: Liquid (Suspension Concentrate)
Colour	: Blue.
Odour	: Pungent odour.
pH	: No data available
Boiling point at atmospheric pressure	: Non-applicable *
Vapour pressure at 20 ºC	: Non-applicable *
Vapour pressure at 50 ºC	: Non-applicable *
Evaporation rate at 20 ºC	: Non-applicable *

Product description:

Density at 20 ºC	: 1.29 g/l
Relative density at 20 ºC	: Non-applicable *
Dynamic viscosity at 20 ºC	: Non-applicable *
Kinematic viscosity at 20 ºC	: Non-applicable *
Kinematic viscosity at 40 ºC	: Non-applicable *
Vapour density at 20 ºC	: Non-applicable *
Partition coefficient n-octanol/water 20 ºC	: Non-applicable *
Solubility in water at 20 ºC	: Soluble in water.
Solubility properties	: Non-applicable *
Decomposition temperature	: Non-applicable *
Melting point/freezing point	: Non-applicable *
Explosive properties	: Non-explosive in the presence of the following materials or conditions: open flames, sparks and static discharge, heat, shocks and mechanical impacts, oxidizing materials, reducing materials, combustible materials, organic materials, metals, acids, alkalis and moisture.
Oxidising properties	: Non-applicable *

Flammability:

Flash Point	: Non Flammable (>60 ºC)
Auto ignition temperature	: Non-applicable *
Lower flammability limit	: Non-applicable *
Upper flammability limit	: Non-applicable *

*Not relevant due to the nature of the product, not providing information property of its hazards.

9.2 Other information
No additional information.

SECTION 10: Stability and reactivity

10.1 Reactivity:
No hazardous reactions are expected because the product is stable under recommended storage conditions. See section 7.

10.2 Chemical stability:
Chemically stable under the conditions of storage, handling and use.

10.3 Possibility of hazardous reactions:
Under the specified conditions, hazardous reactions that lead to excessive temperatures or pressure are not expected.

10.4 Conditions to avoid:
Applicable for handling and storage at room temperature:

Shock and friction	Contact with air	Increase in temperature	Sunlight	Humidity
Not applicable	Not applicable	Avoid	Not applicable	Not applicable

10.5 Incompatible materials:

Acids	Water	Combustive materials	Combustible materials	Others
Yes	Not applicable	Not applicable	Not applicable	Not applicable

10.6 Hazardous decomposition products: Under normal conditions of storage and use, hazardous decomposition products should not be produced.

SECTION 11: Toxicological information

11.1 Information on toxicological effects
The experimental information related to the toxicological properties of the product itself is not available.

11.2 Dangerous health implications:
In case of exposure that is repetitive, prolonged or at concentrations higher than recommended by the occupational exposure limits, it may result in adverse effects on health depending on the means of exposure:

Copper Oxychloride		
	Acute toxicity	**Genus**
LD50 oral	1862 mg/kg	Rat
LD50 dermal	Non-applicable	
LC50 Inhalation	11 mg/L (4 h)	

A. Ingestion (acute effect):
- Acute toxicity: Based on available data, the classification criteria are not met, however, it contains substances classified as dangerous for consumption.
- Corrosively/Irritability: Based on available data, the classification criteria are not met, as it does not contain substances classified as dangerous for this effect.

B. Inhalation (acute effect):
- Acute toxicity: Based on available data, the classification criteria are not met, as it does not contain substances classified as dangerous for inhalation.
- Corrosively/Irritability: Based on available data, the classification criteria are not met, as it does not contain substances classified as dangerous for this effect.

C. Contact with the skin and the eyes (acute effect):
- Contact with the skin: Based on available data, the classification criteria are not met, as it does not contain substances classified as dangerous for skin contact.
- Contact with the eyes: Based on available data, the classification criteria are not met, as it does not contain substances classified as dangerous for this effect.

D. CMR effects (carcinogenicity, mutagenicity and toxicity to reproduction):
- Carcinogenicity: Based on available data, the classification criteria are not met, as it does not contain substances classified as dangerous for the effects mentioned.
- Mutagenicity: Based on available data, the classification criteria are not met, as it does not contain substances classified as dangerous for this effect.

- Reproductive toxicity: Based on available data, the classification criteria are not met, as it does not contain substances classified as dangerous for this effect.

E. Sensitizing effects:
- Respiratory: Based on available data, the classification criteria are not met, as it does not contain substances classified as dangerous with sensitising effects.
- Cutaneous: Based on available data, the classification criteria are not met, as it does not contain substances classified as dangerous for this effect.

F. Specific target organ toxicity (STOT)-time exposure:
Based on available data, the classification criteria are not met, as it does not contain substances classified as dangerous for this effect.

G. Specific target organ toxicity (STOT)-repeated exposure:
- Specific target organ toxicity (STOT)-repeated exposure: Based on available data, the classification criteria are not met, as it does not contain substances classified as dangerous for this effect.
- Skin: Based on available data, the classification criteria are not met, as it does not contain substances classified as dangerous for this effect.

H. Aspiration hazard:
Based on available data, the classification criteria are not met, as it does not contain substances classified as dangerous for this effect.

Other information:
Non-applicable

SECTION 12: Ecological information

The experimental information related to the eco-toxicological properties of the product itself is not available.

12.1 Toxicity:

Zinc phosphate			
	Acute toxicity	**Species**	**Genus**
LC50	0.14 – 2.6 mg Zn2+/L. (96 h)	Oncorhynchus Mykiss	Fish
EC50	0.413 mg Zn2+/L for pH <7 (48 h)	Ceriodaphnia dubia	Crustacean
EC50	0.136– 0.150 mg Zn2+/L (72 h)	Selenastrum capricornutum	Algae

Copper Oxychloride		
	Acute toxicity	**Genus**
LC50 – Oral	812 mg/kg	Rat
LC50 – Oral	470 mg/kg	Mouse
LC50 – Oral	1263 mg/kg	Chicken

12.2 Persistence and degradability: Not available

12.3 Bio accumulative potential: Not available

12.4 Mobility in soil: Not available

12.5 Results of PBT and vPvB assessment: Not available

12.6 Other adverse effects: Not available

SECTION 13: Disposal considerations

The information in this section contains generic advice and guidance. The list of Identified Uses in Section 1 should be consulted for any available use-specific information provided in the Exposure Scenario(s).

13.1 Waste treatment methods

Product
Methods of disposal:
The generation of waste should be avoided or minimised wherever possible. Significant quantities of waste product residues should not be disposed of via the foul sewer but processed in a suitable effluent treatment plant. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements.

Hazardous waste: Non-hazardous waste.

Packaging
Methods of disposal:
The generation of waste should be avoided or minimised wherever possible. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible.

Special precautions:
This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers.

SECTION 14: Transport information

	Land transport (ADR/RID)	Inland waterway transport (AND/ADNR)	Sea Transport (IMDG)	Air transport (ICAO-TI / IATA-DGR)
14.1 UN Number	3082	3082.	3082	3082
14.2 UN proper shipping name	Environmentally hazardous substance, liquid, N.O.S (contains Zinc phosphate and copper oxychloride)	Environmentally hazardous substance, liquid, N.O.S (contains Zinc phosphate and copper oxychloride)	Environmentally hazardous substance, liquid, N.O.S (contains Zinc phosphate and copper oxychloride)	Environmentally hazardous substance, liquid, N.O.S (contains Zinc phosphate and copper oxychloride)
14.3 Transport hazard class(es)	9	9	9	9
14.4 Packing group	III	III	III	III

14.5 Environmental hazards	Yes	Yes	Yes	Yes
14.6 Special precautions for user	No data available	No data available	No data available	No data available
14.7 Transport in bulk according to Annex II of Marpol and the IBC Code:	No data available	No data available	No data available	No data available

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture:
Candidate substances for authorisation under the Regulation (EC) 1907/2006 (REACH): Non-applicable
Substances included in Annex XIV of REACH ("Authorisation List") and sunset date: Non-applicable
Regulation (EC) 1005/2009, about substances that deplete the ozone layer: Non-applicable
Article 95, REGULATION (EU) No 528/2012: Non-applicable
Regulation (EU) No 649/2012, in relation to the import and export of hazardous chemical products: Non-applicable

Limitations to commercialisation and the use of certain dangerous substances and mixtures (Annex XVII REACH, etc. ….): Non-applicable

Specific provisions in terms of protecting people or the environment:
It is recommended to use the information included in this safety data sheet as data used in a risk evaluation of the local circumstances in order to establish the necessary risk prevention measures for the manipulation, use, storage and disposal of this product.

Other legislation:
The product could be affected by sectorial legislation
Regulation (EC) No 2003/2003 of the European Parliament and of the Council of 13 October 2003 relating to fertilisers

15.2 Chemical Safety Assessment: Not available.

SECTION 16: Other information

Legislation related to safety data sheets:
This safety data sheet has been designed in accordance with ANNEX II-Guide to the compilation of safety data sheets of Regulation (EC) Nº 1907/2006 (Regulation (EU) Nº 453/2010, Regulation (EC) Nº 2015/830)

Texts of the legislative phrases mentioned in section 2:
The phrases indicated do not refer to the product itself; they are present merely for informative purposes and refer to the individual components which appear in section 3.

Texts of the legislative phrases mentioned in section 3:
Not applicable.

CLP Regulation (EC) nº 1272/2008 (refer to section 3):
Acute Tox.4: Acute toxicity (oral), Category 4, H302
Acute Tox. 4: Acute toxicity (inhaled), Category 4, H332
Aquatic Acute 1: Aquatic Acute, Category 1, H400
Aquatic Chronic 1: Aquatic Chronic, Category 1, H410

Advice related to training:
Minimal training is recommended to prevent industrial risks for staff using this product, in order to facilitate their comprehension and interpretation of this safety data sheet, as well as the label on the product.

Principal bibliographical sources:
http://echa.europa.eu
www.dguv.de/ifa/gestis-dnel
http://eur-lex.europa.eu

Relevant P-, H- and EUH-phrases (number and full text)
H302 - Harmful if swallowed
H332 - Harmful if inhaled
H400 - Very toxic to aquatic life
H410 - Very toxic to aquatic life with long lasting effects
P101 - If medical advice is needed, have product container or label at hand.
P102 - Keep out of reach of children.
P103 - Read label before use.
P261 - Avoid breathing dust/fume/gas/mist/vapours/spray.
P264 - Wash … thoroughly after handling
P270 - Do no eat, drink or smoke when using this product.
P271 - Use only outdoors or in a well-ventilated area.
P273 - Avoid release to the environment.
P312 - Call a POISON CENTER or doctor/physician if you feel unwell.
P330 - Rinse mouth.
P301+P312 - IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell
P304+P340 - IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P391 - Collect spillage
P501 - Dispose of the contents/containers in accordance with the current legislation on waste treatment

Abbreviations and acronyms:
ADR - European agreement concerning the international carriage of dangerous goods by road
IMDG - International maritime dangerous goods code
IATA - International Air Transport Association
ICAO - International Civil Aviation Organisation
COD - Chemical Oxygen Demand
BOD5 - 5-day biochemical oxygen demand
BCF - Bio concentration factor
Log-POW - Octanol–water partition coefficient
KOC - Partition coefficient of organic carbon

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Notice to reader

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