

Safety Data Sheet (SDS)

OSHA HazCom Standard 29 CFR 1910.1200(g) and GHS Rev 03.

Issue date 07/28/2015

Reviewed on 07/28/2015

1 Identification

- **Product identifier**
- **Trade name:** Florikan CRF TTL Minors with Boron and Molybdate
- **Relevant identified uses of the substance or mixture and uses advised against:**
- **Product description** PC12 Fertilizers
- **Details of the supplier of the safety data sheet:**
- **Manufacturer/Supplier:**
Florikan ESA, LLC
6801 Energy Ct
Suite 100
Sarasota, FL. 34240
ph: 941-379-4048 ext 332
Fax: 941-377-3633
Email product info: Doug Cabe; dcabe@florikan.com
- **Emergency telephone number:** Chemtrec 800-424-9300

www.Florikan.com**2 Hazard(s) identification**

- **Classification of the substance or mixture:**



GHS08 Health hazard

STOT RE 2 H373 May cause damage to organs through prolonged or repeated exposure.



GHS09 Environment

Aquatic Chronic 2 H411 Toxic to aquatic life with long lasting effects.



GHS07

Skin Irrit. 2 H315 Causes skin irritation.

Eye Irrit. 2B H320 Causes eye irritation.

- **Label elements:**
- **GHS label elements**
The product is classified and labeled according to the Globally Harmonized System (GHS).

- **Hazard pictograms:**



GHS07 GHS08 GHS09

- **Signal word:** Warning

- **Hazard-determining components of labeling:**

Manganese(II) Sulfate Monohydrate

- **Hazard statements:**

Causes skin and eye irritation.

May cause damage to organs through prolonged or repeated exposure.

Toxic to aquatic life with long lasting effects.

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Precautionary statements:

- Do not breathe dust/fume/gas/mist/vapors/spray.
- Wear protective gloves.
- Avoid release to the environment.
- Wash thoroughly after handling.
- If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
- Specific treatment (see supplementary first aid instructions on this Safety Data Sheet).
- If skin irritation occurs: Get medical advice/attention.
- If eye irritation persists: Get medical advice/attention.
- Get medical advice/attention if you feel unwell.
- If on skin: Wash with plenty of water.
- Collect spillage.
- Take off contaminated clothing and wash it before reuse.
- Dispose of contents/container in accordance with local/regional/national/international regulations.

Unknown acute toxicity:

- 4.3 percent of the mixture consists of ingredient(s) of unknown toxicity.

Classification system:

NFPA ratings (scale 0 - 4)



HMS-ratings (scale 0 - 4)



Hazard(s) not otherwise classified (HNOC): None known

3 Composition/information on ingredients

Chemical characterization: Mixtures

Description: Mixture: consisting of the following components.

Dangerous Components:

CAS: 7487-88-9 RTECS: OM 4500000	Magnesium Sulphate STOT SE 3, H335	25-50%
CAS: 7720-78-7 RTECS: NO 8510000	iron(II) sulfate Acute Tox. 4, H302; Skin Irrit. 2, H315; Eye Irrit. 2A, H319	15-35%
CAS: 15708-41-5	EDTA feric sodium complex Acute Tox. 4, H332; STOT SE 3, H335	2-12%
CAS: 10034-96-5 RTECS: OP0893500	Manganese(II) Sulfate Monohydrate STOT RE 2, H373; Aquatic Chronic 2, H411; STOT SE 3, H335; Aquatic Acute 2, H401	2-12%
CAS: 7758-99-8 RTECS: GL 8800000	Copper Sulfate Pentahydrate Aquatic Acute 1, H400; Aquatic Chronic 1, H410; Acute Tox. 4, H302; Skin Irrit. 2, H315; Eye Irrit. 2, H319	≤ 2.5%



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CAS: 7733-02-0	Zinc Sulphate (anhydrous)	≤ 2.5%
		
CAS: 1319-33-1 RTECS: ED 7350000	Boron	≤ 2.5%

4 First-aid measures

- **Description of first aid measures:**
- **After inhalation:** In case of unconsciousness place patient stably in side position for transportation.
- **After skin contact:**
Immediately wash with water and soap and rinse thoroughly.
If skin irritation occurs, consult a doctor.
- **After eye contact:**
Rinse opened eye for at least 15 minutes under running water. If symptoms persist, consult a doctor.
- **After swallowing:** If swallowed and symptoms occur, consult a doctor.
- **Information for doctor:**
- **Most important symptoms and effects, both acute and delayed:** No further relevant information available.
- **Indication of any immediate medical attention and special treatment needed:**
No further relevant information available.

5 Fire-fighting measures

- **Extinguishing media:**
- **Suitable extinguishing agents:**
CO₂, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
- **Special hazards arising from the substance or mixture:** No further relevant information available.
- **Advice for firefighters:**
- **Protective equipment:**
As in any fire, wear self-contained breathing apparatus pressure-demand (NIOSH approved or equivalent) and full protective gear to prevent contact with skin and eyes.

6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures:** Not required.
- **Environmental precautions:**
Inform respective authorities in case of seepage into water course or sewage system.
Do not allow to enter sewers/ surface or ground water.
- **Methods and material for containment and cleaning up:**
Dispose of the collected material according to regulations.
- **Reference to other sections:**
See Section 7 for information on safe handling.
See Section 8 for information on personal protection equipment.
See Section 13 for disposal information.

7 Handling and storage

- **Handling**
- **Precautions for safe handling:** No special precautions are necessary if used correctly.
- **Information about protection against explosions and fires:** No special measures required.
- **Conditions for safe storage, including any incompatibilities:**
- **Storage**
- **Requirements to be met by storerooms and receptacles:** No special requirements.

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- **Information about storage in one common storage facility:** Not required.
- **Further information about storage conditions:** Keep receptacle tightly sealed.
- **Specific end use(s):** No further relevant information available.

8 Exposure controls/personal protection

- **Additional information about design of technical systems:** No further data; see section 7.

· **Control parameters:**

· **Components with occupational exposure limits:**

7720-78-7 iron(II) sulfate

REL	Long-term value: 1 mg/m ³ as Fe
TLV	Long-term value: 1 mg/m ³ as Fe

15708-41-5 EDTA feric sodium complex

STEL	Short-term value: 10 mg/m ³
TWA	Short-term value: 10 mg/m ³

10034-96-5 Manganese(II) Sulfate Monohydrate

ACGIH CEILING	Short-term value: 2 E mg/m ³ Long-term value: 0.5 E mg/m ³
OSHA CEILING	Short-term value: 2 E mg/m ³ Long-term value: 0.5 E mg/m ³ Ceiling limit value: 5 mg/m ³
PEL	Ceiling limit value: 5 mg/m ³ as Mn
REL	Short-term value: 3 mg/m ³ Long-term value: 1 mg/m ³ as Mn
TLV	Long-term value: 0.02* 0.1* mg/m ³ as Mn; *respirable **inhalable fraction

1319-33-1 Boron

PEL	Short-term value: 5 mg/m ³ Long-term value: 15 mg/m ³ *OSHA PELs are based on an 8-hour TWA exposure.
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- **Additional information:** The lists that were valid during the creation of this SDS were used as basis.

· **Exposure controls:**

· **Personal protective equipment:**

· **General protective and hygienic measures:**

Keep away from foodstuffs, beverages and feed.
 Immediately remove all soiled and contaminated clothing and wash before reuse.
 Wash hands before breaks and at the end of work.
 Avoid contact with the eyes and skin.

· **Breathing equipment:** Not required.

· **Protection of hands:**



Protective gloves

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· **Eye protection:**



Tightly sealed goggles

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· **Information on basic physical and chemical properties**

· **General Information**

· **Appearance:**

Form:

Granulate

Color:

Whitish

· **Odor:**

Slight

· **Odor threshold:**

Not determined.

· **pH-value:**

Not applicable.

· **Change in condition**

Melting point/Melting range:

Not determined.

Boiling point/Boiling range:

Not determined.

· **Flash point:**

Not applicable.

· **Flammability (solid, gaseous):**

Not determined.

· **Ignition temperature:**

Decomposition temperature:

Not determined.

· **Auto igniting:**

Product is not self-igniting.

· **Danger of explosion:**

Product does not present an explosion hazard.

· **Explosion limits:**

Lower:

Not determined.

Upper:

Not determined.

· **Vapor pressure:**

Not applicable.

· **Density:**

Relative density:

Not determined.

Vapor density:

Not applicable.

Evaporation rate:

Not applicable.

· **Solubility in / Miscibility with:**

Water:

Soluble.

· **Partition coefficient (n-octanol/water):**

Not determined.

· **Viscosity:**

Dynamic:

Not applicable.

Kinematic:

Not applicable.

· **Solvent content:**

Organic solvents:

0.0 %

Solids content:

100 %

· **Other information:**

No further relevant information available.

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10 Stability and reactivity

- **Reactivity:** No further relevant information available.
- **Chemical stability:** Stable under normal conditions.
- **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
- **Possibility of hazardous reactions:** No dangerous reactions known.
- **Conditions to avoid:** No further relevant information available.
- **Incompatible materials:** No further relevant information available.
- **Hazardous decomposition products:** No dangerous decomposition products known.

11 Toxicological information

- **Information on toxicological effects:**
- **Acute toxicity:**

- **LD/LC50 values that are relevant for classification:**

7487-88-9 Magnesium Sulphate

Oral	LD50	>2000 mg/kg (rat)
Inhalative	LC50/4 h	>2000 mg/l (rabbit)
	LC50/96 hours	2820 mg/l (Pimephales)

7720-78-7 iron(II) sulfate

Oral	LD50	1520 mg/kg (mouse)
------	------	--------------------

15708-41-5 EDTA feric sodium complex

Oral	LD50	>2000 mg/kg (rat)
Dermal	LD50	>2000 mg/kg (rat)
Inhalative	LC50/4 h	>2.75 mg/l (rat)
	LC50/96 hours	>100 mg/l (Trout)

7758-99-8 Copper Sulfate Pentahydrate

Oral	LD50	300 mg/kg (rat)
------	------	-----------------

1319-33-1 Boron

Oral	LD50	2660 mg/kg (rat)
------	------	------------------

- **Primary irritant effect:**
- **On the skin:** Irritant to skin and mucous membranes.
- **On the eye:** Irritating effect.
- **Additional toxicological information:**
The product shows the following dangers according to internally approved calculation methods for preparations:
Irritant

- **Carcinogenic categories:**

- **IARC (International Agency for Research on Cancer):**

None of the ingredients are listed.

- **NTP (National Toxicology Program):**

None of the ingredients are listed.

- **OSHA-Ca (Occupational Safety & Health Administration):**

None of the ingredients are listed.

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12 Ecological information

· **Toxicity:**

· **Aquatic toxicity:**

Avoid release into the environment. Runoff from fire control or dilution water may cause pollution.

7487-88-9 Magnesium Sulphate

EC50 2700 mg/l (Green algae)

343.56 mg/l (Water flea)

15708-41-5 EDTA feric sodium complex

EC50 100.9 mg/l (daphnia)

· **Persistence and degradability:** No further relevant information available.

· **Behavior in environmental systems:**

· **Bioaccumulative potential:** No further relevant information available.

· **Mobility in soil:** No further relevant information available.

· **Ecotoxicological effects:**

· **Remark:** Toxic for fish

· **Additional ecological information:**

· **General notes:**

Do not allow product to reach ground water, water course or sewage system.

Danger to drinking water if even small quantities leak into the ground.

Poisonous for fish and plankton in water bodies.

Toxic for aquatic organisms

· **Results of PBT and vPvB assessment:**

· **PBT:** Not applicable.

· **vPvB:** Not applicable.

· **Other adverse effects:** No further relevant information available.

13 Disposal considerations

· **Waste treatment methods:**

· **Recommendation:**

Must not be disposed of together with household garbage. Do not allow product to reach sewage system.

· **Uncleaned packagings:**

· **Recommendation:** Disposal must be made according to official regulations.

· **Recommended cleansing agent:** Water, if necessary with cleansing agents.

* 14 Transport information

· **UN-Number:**

· **DOT**

· **ADR, IMDG, IATA**

· **UN proper shipping name:**

· **DOT**

· **ADR**

Non-Regulated Material

UN3077

Non-Regulated Material

UN3077 Environmentally hazardous substances, solid, n.o.s. (Manganese(II) Sulfate Monohydrate, Copper Sulfate Pentahydrate)

· **IMDG**

ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Manganese(II) Sulfate Monohydrate, Copper Sulfate Pentahydrate), MARINE POLLUTANT

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Trade name: Florikote Controlled Release TTL Minors with Boron and Molybdate

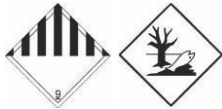
· **IATA** ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Manganese(II) Sulfate Monohydrate, Copper Sulfate Pentahydrate)

· **Transport hazard class(es):**

· **DOT**

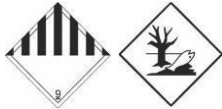
· **Class:** Non-Regulated Material

· **ADR**



· **Class:** 9 (M7) Miscellaneous dangerous substances and articles
 · **Label:** 9

· **IMDG, IATA**



· **Class:** 9 Miscellaneous dangerous substances and articles
 · **Label:** 9

· **Packing group:**

· **DOT**

· **ADR, IMDG, IATA**

· **Environmental hazards:**

· **Special marking (ADR):**

· **Special marking (IATA):**

· **Special precautions for user:**

· **Danger code (Kemler):**

· **EMS Number:**

· **Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code:**

· **Transport/Additional information:**

Non-Regulated Material

III

Product contains environmentally hazardous substances:
 Copper Sulfate Pentahydrate

Symbol (fish and tree)

Symbol (fish and tree)

Warning: Miscellaneous dangerous substances and articles

90

F-A,S-F

Not applicable.

· **ADR**

· **Excepted quantities (EQ):**

Code: E1

Maximum net quantity per inner packaging: 30 g

Maximum net quantity per outer packaging: 1000 g

· **IMDG**

· **Limited quantities (LQ):**

· **Excepted quantities (EQ):**

5 kg

Code: E1

Maximum net quantity per inner packaging: 30 g

Maximum net quantity per outer packaging: 1000 g

· **UN "Model Regulation":**

UN 3077 ENVIRONMENTALLY HAZARDOUS SUBSTANCES, SOLID, N.O.S. (MANGANESE(II) SULFATE MONOHYDRATE, COPPER SULFATE PENTAHYDRATE), 9, III

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15 Regulatory information

· **Safety, health and environmental regulations/legislation specific for the substance or mixture:**

· **SARA (Superfund Amendments and Reauthorization):**

· **Section 355 (extremely hazardous substances):**

7720-78-7 iron(II) sulfate

· **Section 313 (Specific toxic chemical listings):**

10034-96-5 Manganese(II) Sulfate Monohydrate

7758-99-8 Copper Sulfate Pentahydrate

7733-02-0 Zinc Sulphate (anhydrous)

· **TSCA (Toxic Substances Control Act):**

7487-88-9 Magnesium Sulphate

7720-78-7 iron(II) sulfate

15708-41-5 EDTA feric sodium complex

25791-96-2 Poly(oxypropylene) triol

7758-99-8 Copper Sulfate Pentahydrate

7733-02-0 Zinc Sulphate (anhydrous)

1319-33-1 Boron

7631-95-0 Sodium Molybdate

1332-58-7 Kaolin

· **California Proposition 65:**

· **Chemicals known to cause cancer:**

None of the ingredients are listed.

· **Chemicals known to cause reproductive toxicity for females:**

None of the ingredients are listed.

· **Chemicals known to cause reproductive toxicity for males:**

None of the ingredients are listed.

· **Chemicals known to cause developmental toxicity:**

None of the ingredients are listed.

· **Carcinogenic categories:**

· **EPA (Environmental Protection Agency):**

10034-96-5 Manganese(II) Sulfate Monohydrate

D

7733-02-0 Zinc Sulphate (anhydrous)

D, I, II

1319-33-1 Boron

I

· **TLV (Threshold Limit Value established by ACGIH):**

1332-58-7 Kaolin

2 mg/m3

· **NIOSH-Ca (National Institute for Occupational Safety and Health):**

None of the ingredients are listed.

· **GHS label elements**

The product is classified and labeled according to the Globally Harmonized System (GHS).

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Trade name: Florikan CRF TTL Minors with Boron and Molybdate

· **Hazard pictograms:**



GHS07 GHS08 GHS09

· **Signal word:** Warning

· **Hazard-determining components of labeling:**

Manganese(II) Sulfate Monohydrate

· **Hazard statements:**

Causes skin and eye irritation.

May cause damage to organs through prolonged or repeated exposure.

Toxic to aquatic life with long lasting effects.

· **Precautionary statements:**

Do not breathe dust/fume/gas/mist/vapors/spray.

Wear protective gloves.

Avoid release to the environment.

Wash thoroughly after handling.

If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do.

Continue rinsing.

Specific treatment (see supplementary first aid instructions on this Safety Data Sheet).

If skin irritation occurs: Get medical advice/attention.

If eye irritation persists: Get medical advice/attention.

Get medical advice/attention if you feel unwell.

If on skin: Wash with plenty of water.

Collect spillage.

Take off contaminated clothing and wash it before reuse.

Dispose of contents/container in accordance with local/regional/national/international regulations.

· **National regulations:**

The product is subject to be classified according with the latest version of the regulations on hazardous substances.

· **State Right to Know:**

CAS: 7487-88-9 RTECS: OM 4500000	Magnesium Sulphate ⚠ STOT SE 3, H335	25-50%
CAS: 7720-78-7 RTECS: NO 8510000	iron(II) sulfate ⚠ Acute Tox. 4, H302; Skin Irrit. 2, H315; Eye Irrit. 2A, H319	15-35%
CAS: 15708-41-5	EDTA feric sodium complex ⚠ Acute Tox. 4, H332; STOT SE 3, H335	2-12%
CAS: 10034-96-5 RTECS: OP0893500	Manganese(II) Sulfate Monohydrate ⚠ STOT RE 2, H373; ⚠ Aquatic Chronic 2, H411; ⚠ STOT SE 3, H335; ⚠ Aquatic Acute 2, H401	2-12%
CAS: 25791-96-2	Poly(oxypropylene) triol	≤ 2.5%
CAS: 7758-99-8 RTECS: GL 8800000	Copper Sulfate Pentahydrate ⚠ Aquatic Acute 1, H400; ⚠ Aquatic Chronic 1, H410; ⚠ Acute Tox. 4, H302; ⚠ Skin Irrit. 2, H315; Eye Irrit. 2, H319	≤ 2.5%
All ingredients are listed.		

· **Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

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16 Other information

The information and recommendations in this safety data sheet are, to the best of our knowledge, accurate as of the date of issue. Nothing herein shall be deemed to create warranty, expressed or implied, and shall not establish a legally valid contractual relationship. It is the responsibility of the user to determine applicability of this information and the suitability of the material or product for any particular purpose.

• **Date of preparation / last revision:** 07/28/2015 / 1

• **Abbreviations and acronyms:**

ADR: The European Agreement concerning the International Carriage of Dangerous Goods by Road

ADN: The European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways

IMDG: International Maritime Code for Dangerous Goods

DOT: US Department of Transportation

IATA: International Air Transport Association

ACGIH: American Conference of Governmental Industrial Hygienists

EINECS: European Inventory of Existing Commercial Chemical Substances

ELINCS: European List of Notified Chemical Substances

CAS: Chemical Abstracts Service (division of the American Chemical Society)

NFPA: National Fire Protection Association (USA)

HMIS: Hazardous Materials Identification System (USA)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

PBT: Persistent, Bioaccumulative and Toxic

vPvB: very Persistent and very Bioaccumulative

Acute Tox. 4: Acute toxicity, Hazard Category 4

Skin Irrit. 2: Skin corrosion/irritation, Hazard Category 2

Eye Dam. 1: Serious eye damage/eye irritation, Hazard Category 1

Eye Irrit. 2: Serious eye damage/eye irritation, Hazard Category 2

Eye Irrit. 2A: Serious eye damage/eye irritation, Hazard Category 2A

Eye Irrit. 2B: Serious eye damage/eye irritation, Hazard Category 2B

STOT SE 3: Specific target organ toxicity - Single exposure, Hazard Category 3

STOT RE 2: Specific target organ toxicity - Repeated exposure, Hazard Category 2

Aquatic Acute 1: Hazardous to the aquatic environment - AcuteHazard, Category 1

Aquatic Acute 2: Hazardous to the aquatic environment - AcuteHazard, Category 2

Aquatic Chronic 1: Hazardous to the aquatic environment - Chronic Hazard, Category 1

Aquatic Chronic 2: Hazardous to the aquatic environment - Chronic Hazard, Category 2

• *** Data compared to the previous version altered.**

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