

Safety Data Sheet (SDS)

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

Printing date 03/17/2015

Reviewed on 03/17/2015

1 Identification

- **Product identifier**
- **Trade name:** Florikan-Max-50
- **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

Acute Tox. 4 H302 Harmful if swallowed.
Skin Irrit. 2 H315 Causes skin irritation.
Eye Irrit. 2A H319 Causes serious eye irritation.
STOT SE 3 H335 May cause respiratory 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:**

iron(II) sulfate
Magnesium Sulphate
Manganese(II) Sulfate Monohydrate

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Trade name: Florikan-Max

Magnesium Oxide
Copper Sulfate Pentahydrate

• **Hazard statements**

Harmful if swallowed.
Causes skin irritation.
Causes serious eye irritation.
May cause respiratory 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.
Use only outdoors or in a well-ventilated area.
Wear protective gloves.
Wear eye protection / face protection.
Avoid release to the environment.
Wash thoroughly after handling.
Do not eat, drink or smoke when using this product.
If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
If swallowed: Call a poison center/doctor if you feel unwell.
Specific treatment (see on this label).
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
If skin irritation occurs: Get medical advice/attention.
If eye irritation persists: Get medical advice/attention.
Get medical advice/attention if you feel unwell.
Rinse mouth.
If on skin: Wash with plenty of water.
Collect spillage.
Take off contaminated clothing and wash it before reuse.
Store locked up.
Store in a well-ventilated place. Keep container tightly closed.
Dispose of contents/container in accordance with local/regional/national/international regulations.

• **Unknown acute toxicity:**

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

• **Hazard description:**

Magnesium compounds have variable toxicity. There is no evidence that magnesium produces true systemic poisoning. Particles of metallic magnesium or magnesium alloy which perforate the skin or gain entry through cuts and scratches may produce a severe local lesion characterized by the evolution of gas and acute inflammatory reaction, frequently with necrosis.

• **Classification system:**

• **NFPA ratings (scale 0 - 4)**



• **HMIS-ratings (scale 0 - 4)**



• **Other hazards** None known

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3 Composition/information on ingredients

- **Chemical characterization: Mixtures**
- **Description:** Mixture of substances listed below with nonhazardous additions.
- **Dangerous Components:**

CAS: 7487-88-9 RTECS: OM 4500000	Magnesium Sulphate ⚠ STOT SE 3, H335	15-35%
CAS: 1309-48-4	Magnesium Oxide ⚠ Skin Irrit. 2, H315; Eye Irrit. 2A, H319; STOT SE 3, H335	15-35%
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: 11129-60-5	Manganese oxide	5-10%
CAS: 10034-96-5 RTECS: OP0893500	Manganese(II) Sulfate Monohydrate ⚠ STOT RE 2, H373; ⚠ Aquatic Chronic 2, H411; ⚠ STOT SE 3, H335; 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%
CAS: 7733-02-0	Zinc Sulphate (anhydrous) ⚠ Eye Dam. 1, H318; ⚠ Aquatic Acute 1, H400; Aquatic Chronic 1, H410; ⚠ Acute Tox. 4, H302	≤ 2.5%
CAS: 1314-13-2 RTECS: ZH 4810000	zinc oxide ⚠ Aquatic Acute 1, H400; Aquatic Chronic 1, H410	≤ 2.5%

4 First-aid measures

- **Description of first aid measures**
- **General information:**
Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.
- **After inhalation:** In case of unconsciousness, place patient securely on 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:** Immediately call 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**
Magnesium oxide takes up carbon dioxide and water from the air. Combines with water to form magnesium hydroxide. May have a violent reaction or ignition on contact with inter-halogens.

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- **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 contaminated material as waste according to section 13.

Ensure adequate ventilation.

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.

- **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:**

1309-48-4 Magnesium Oxide

PEL Long-term value: 15* mg/m³
fume; *total particulate

TLV Long-term value: 10* mg/m³
*as inhalable fraction

7720-78-7 iron(II) sulfate

REL Long-term value: 1 mg/m³
as Fe

TLV Long-term value: 1 mg/m³
as Fe

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11129-60-5 Manganese oxide

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

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

1314-13-2 zinc oxide

PEL	Long-term value: 15* 5** mg/m ³ *total dust **respirable fraction and fume
REL	Short-term value: 10** mg/m ³ Long-term value: 5* 5** mg/m ³ Ceiling limit value: 15* mg/m ³ *dust only **fume
TLV	Short-term value: 10* mg/m ³ Long-term value: 2* mg/m ³ *as respirable fraction

• **Additional information:** The lists that were valid during the creation 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

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.

Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.

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Select glove material based on penetration times, rates of diffusion and degradation.

• **Material of gloves**

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.

• **Penetration time of glove material**

The exact break-through time has to be determined and observed by the manufacturer of the protective gloves.

• **Eye protection:** Tightly sealed goggles

9 Physical and chemical properties

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

• **General Information**

• **Appearance:**

Form:

Granulate

Color:

Whitish

• **Odor:**

Odorless

• **Odor threshold:**

Not determined.

• **pH-value:**

Not applicable.

• **Change in condition**

Melting point/Melting range:

Not determined.

Boiling point/Boiling range:

3600 °C (6512 °F)

• **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:

Insoluble.

• **Partition coefficient (n-octanol/water):** Not determined.

• **Viscosity:**

Dynamic:

Not applicable.

Kinematic:

Not applicable.

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- **Solvent content:**
 - Organic solvents:** 0.0 %
 - Solids content:** 100 %
- **Other information** No further relevant information available.

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:** Magnesium hydroxide.

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 (Pneumonia)

7758-99-8 Copper Sulfate Pentahydrate

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

1314-13-2 zinc oxide

Oral	LD50	> 5000 mg/kg (rat)
------	------	--------------------

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

- **Carcinogenic categories**
- **IARC (International Agency for Research on Cancer)**
 - None of the ingredients are listed.

Group 1 - Carcinogenic to humans
Group 2A - Probably carcinogenic to humans
Group 2B - Possibly carcinogenic to humans
Group 3 - Not classifiable as to its carcinogenicity to humans
Group 4 - Probably not carcinogenic to humans

- **NTP (National Toxicology Program)**

None of the ingredients are listed.

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· OSHA-Ca (Occupational Safety & Health Administration)

None of the ingredients are listed.

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)

· **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.

Also 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.

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

· **IATA**

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

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Trade name: Florikan-Max

- **Transport hazard class(es)**

- **DOT**
- **Class**

Non-Regulated Material

- **ADR**



- **Class**
- **Label**

9 (M7) Miscellaneous dangerous substances and articles
9

- **IMDG, IATA**



- **Class**
- **Label**
- **Packing group**
- **DOT**
- **ADR, IMDG, IATA**

9 Miscellaneous dangerous substances and articles
9

- **Environmental hazards:**

Product contains environmentally hazardous substances:
Copper Sulfate Pentahydrate

- **Special marking (ADR):**
- **Special marking (IATA):**
- **Special precautions for user**
- **Danger code (Kemler):**
- **EMS Number:**

Symbol (fish and tree)
Symbol (fish and tree)
Warning: Miscellaneous dangerous substances and articles
90
F-A,S-F

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

Not applicable.

- **Transport/Additional information:**

-
- **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":**

UN3077, 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**

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

7720-78-7 iron(II) sulfate

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

11129-60-5 Manganese oxide

10034-96-5 Manganese(II) Sulfate Monohydrate

7758-99-8 Copper Sulfate Pentahydrate

7733-02-0 Zinc Sulphate (anhydrous)

1314-13-2 zinc oxide

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

7487-88-9 Magnesium Sulphate

1317-61-9 Iron Oxide

1309-48-4 Magnesium Oxide

7720-78-7 iron(II) sulfate

7758-99-8 Copper Sulfate Pentahydrate

7733-02-0 Zinc Sulphate (anhydrous)

1314-13-2 zinc oxide

7631-95-0 Sodium Molybdate

- **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)**

11129-60-5 Manganese oxide

D

10034-96-5 Manganese(II) Sulfate Monohydrate

D

7733-02-0 Zinc Sulphate (anhydrous)

D, I, II

1314-13-2 zinc oxide

D, I, II

- **TLV (Threshold Limit Value established by ACGIH)**

1309-48-4 Magnesium Oxide

A4

- **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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· Hazard pictograms



GHS07 GHS08 GHS09

· Signal word Warning

· Hazard-determining components of labeling:

iron(II) sulfate
Magnesium Sulphate
Manganese(II) Sulfate Monohydrate
Magnesium Oxide
Copper Sulfate Pentahydrate

· Hazard statements

Harmful if swallowed.
Causes skin irritation.
Causes serious eye irritation.
May cause respiratory 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.
Use only outdoors or in a well-ventilated area.
Wear protective gloves.
Wear eye protection / face protection.
Avoid release to the environment.
Wash thoroughly after handling.
Do not eat, drink or smoke when using this product.
If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
If swallowed: Call a poison center/doctor if you feel unwell.
Specific treatment (see on this label).
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
If skin irritation occurs: Get medical advice/attention.
If eye irritation persists: Get medical advice/attention.
Get medical advice/attention if you feel unwell.
Rinse mouth.
If on skin: Wash with plenty of water.
Collect spillage.
Take off contaminated clothing and wash it before reuse.
Store locked up.
Store in a well-ventilated place. Keep container tightly closed.
Dispose of contents/container in accordance with local/regional/national/international regulations.

· National regulations:

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

· State Right to Know

CAS: 7487-88-9	Magnesium Sulphate	15-35%
RTECS: OM 4500000	 STOT SE 3, H335	

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CAS: 1317-61-9	Iron Oxide	15-35%
CAS: 1309-48-4	Magnesium Oxide	15-35%
	⚠ Skin Irrit. 2, H315; Eye Irrit. 2A, H319; STOT SE 3, H335	
CAS: 7720-78-7 RTECS: NO 8510000	iron(II) sulfate	15-35%
	⚠ Acute Tox. 4, H302; Skin Irrit. 2, H315; Eye Irrit. 2A, H319	
CAS: 11129-60-5	Manganese oxide	5-10%
CAS: 10034-96-5 RTECS: OP0893500	Manganese(II) Sulfate Monohydrate	2-12%
	⚠ STOT RE 2, H373; ⚠ Aquatic Chronic 2, H411; ⚠ STOT SE 3, H335; H401	
All ingredients are listed.		

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

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** 03/17/2015 / -

- **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
 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
 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
 : 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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