

## 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:** 16-4-9-180
- **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](http://www.Florikan.com)

### 2 Hazard(s) identification

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



GHS07

Skin Irrit. 2 H315 Causes skin irritation.

STOT SE 3 H335 May cause respiratory 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

- **Signal word:** Warning
- **Hazard-determining components of labeling:**  
Ammonium Nitrate  
Magnesium Sulphate  
Ammonium phosphate monobasic  
Magnesium Oxide
- **Hazard statements:**  
Causes skin and eye irritation.  
May cause respiratory irritation.
- **Precautionary statements:**  
Avoid breathing dust/fume/gas/mist/vapors/spray.  
Use only outdoors or in a well-ventilated area.  
Wear protective gloves.  
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).

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IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.

Call a poison center/doctor if you feel unwell.

If skin irritation occurs: Get medical advice/attention.

If eye irritation persists: Get medical advice/attention.

If on skin: Wash with plenty of water.

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:**

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

· **Classification system:**

· **NFPA ratings (scale 0 - 4)**



Health = 1

Fire = 0

Reactivity = 0

· **HMS-ratings (scale 0 - 4)**



Health = 1

Fire = 0

Reactivity = 0

· **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: 6484-52-2<br>RTECS: BR9050000  | Ammonium Nitrate<br>⚠ Ox. Sol. 3, H272; ⚠ Skin Irrit. 2, H315; Eye Irrit. 2A, H319; STOT SE 3, H335                         | 25-50% |
| CAS: 7487-88-9<br>RTECS: OM 4500000 | Magnesium Sulphate<br>⚠ STOT SE 3, H335                                                                                     | 5-10%  |
| CAS: 7722-76-1                      | Ammonium phosphate monobasic<br>⚠ Skin Irrit. 2, H315; STOT SE 3, H335; Eye Irrit. 2B, H320                                 | 5-10%  |
| CAS: 14807-96-6<br>RTECS: WW2710000 | Talc (Mg3H2(SiO3)4) not containing asbestos or asbestiform fibres                                                           | 2-12%  |
| CAS: 7720-78-7<br>RTECS: NO 8510000 | iron(II) sulfate<br>⚠ Acute Tox. 4, H302; Skin Irrit. 2, H315; Eye Irrit. 2A, H319                                          | ≤ 2.5% |
| CAS: 1309-48-4                      | Magnesium Oxide<br>⚠ Skin Irrit. 2, H315; Eye Irrit. 2A, H319; STOT SE 3, H335                                              | ≤ 2.5% |
| CAS: 10034-96-5<br>RTECS: OP0893500 | Manganese(II) Sulfate Monohydrate<br>⚠ STOT RE 2, H373; ⚠ Aquatic Chronic 2, H411; ⚠ STOT SE 3, H335; Aquatic Acute 2, H401 | ≤ 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.

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- **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:**  
CO<sub>2</sub>, 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:** Do not allow to enter sewers/ surface or ground water.
- **Methods and material for containment and cleaning up:**  
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.

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· **Control parameters:**

· **Components with occupational exposure limits:**

**14807-96-6 Talc ( $\text{Mg}_3\text{H}_2(\text{SiO}_3)_4$ ) not containing asbestos or asbestiform fibres**

PEL Long-term value: 20 mppcf ppm  
(containing <1% Quartz)

REL Long-term value: 2\*  $\text{mg}/\text{m}^3$   
\*respirable dust

TLV Long-term value: 2\*  $\text{mg}/\text{m}^3$   
\*as respirable fraction; E

**7720-78-7 iron(II) sulfate**

REL Long-term value: 1  $\text{mg}/\text{m}^3$   
as Fe

TLV Long-term value: 1  $\text{mg}/\text{m}^3$   
as Fe

**1309-48-4 Magnesium Oxide**

PEL Long-term value: 15\*  $\text{mg}/\text{m}^3$   
fume; \*total particulate

TLV Long-term value: 10\*  $\text{mg}/\text{m}^3$   
\*as inhalable fraction

· **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

· **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:**

Slight

· **Odor threshold:**

Not determined.

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- **pH-value:** Not applicable.
- **Change in condition**
  - Melting point/Melting range:** Not determined.
  - Boiling point/Boiling range:** 210 °C (410 °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:** Soluble.
- **Partition coefficient (n-octanol/water):** Not determined.
- **Viscosity:**
  - Dynamic:** Not applicable.
  - Kinematic:** Not applicable.
- **Solvent content:**
  - Organic solvents:** 0.0 %
  - Solids content:** 100.0 %
- **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:** No dangerous decomposition products known.

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### 11 Toxicological information

· **Information on toxicological effects:**

· **Acute toxicity:**

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

**6484-52-2 Ammonium Nitrate**

|      |      |                  |
|------|------|------------------|
| Oral | LD50 | 2217 mg/kg (rat) |
|------|------|------------------|

**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) |
|------|------|--------------------|

· **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.

### 12 Ecological information

· **Toxicity:**

· **Aquatic toxicity:**

**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.

· **Additional ecological information:**

· **General notes:**

Do not allow undiluted product or product that has not been neutralized to reach ground water, water course or sewage system.

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

· **PBT:** Not applicable.

· **vPvB:** Not applicable.

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

### 13 Disposal considerations

- **Waste treatment methods:**
- **Recommendation:**  
Small quantities can be disposed of with household waste.  
Observe all federal, state and local environmental regulations when disposing of this material.
- **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** UN2071
- **UN proper shipping name:**
- **DOT, IMDG, IATA** Ammonium nitrate based fertilizer
- **ADR** UN2071 Ammonium nitrate based fertilizer
- **Transport hazard class(es):**
- **DOT, ADR, IMDG, IATA**



- **Class:** 9 Miscellaneous dangerous substances and articles
- **Label:** 9
- **Packing group:**
- **DOT, ADR, IMDG, IATA** III
- **Environmental hazards:** Not applicable.
- **Special precautions for user:** Warning: Miscellaneous dangerous substances and articles
- **EMS Number:** F-H,S-Q
- **Segregation groups:** Ammonium compounds
- **Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code:** Not applicable.
- **Transport/Additional information:**
- **DOT**
- **Quantity limitations:** On passenger aircraft/rail: 200 KG  
On cargo aircraft only: 200 KG
- **ADR**
- **Excepted quantities (EQ):** CARRIAGE PROHIBITED
- **UN "Model Regulation":** UN 2071 AMMONIUM NITRATE BASED FERTILIZER, , III

### 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

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|                                                                      |                                                                                                                       |          |
|----------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------|----------|
| · <b>Section 313 (Specific toxic chemical listings):</b>             |                                                                                                                       |          |
| 6484-52-2                                                            | Ammonium Nitrate                                                                                                      |          |
| 11129-60-5                                                           | Manganese oxide                                                                                                       |          |
| 10034-96-5                                                           | Manganese(II) Sulfate Monohydrate                                                                                     |          |
| 7783-20-2                                                            | Ammonium Sulfate                                                                                                      |          |
| 7758-99-8                                                            | Copper Sulfate Pentahydrate                                                                                           |          |
| 7733-02-0                                                            | Zinc Sulphate (anhydrous)                                                                                             |          |
| 1314-13-2                                                            | Zinc Oxide                                                                                                            |          |
| · <b>TSCA (Toxic Substances Control Act):</b>                        |                                                                                                                       |          |
| 6484-52-2                                                            | Ammonium Nitrate                                                                                                      |          |
| 7778-80-5                                                            | Potassium Sulfate                                                                                                     |          |
| 7487-88-9                                                            | Magnesium Sulphate                                                                                                    |          |
| 7722-76-1                                                            | Ammonium phosphate monobasic                                                                                          |          |
| 14807-96-6                                                           | Talc (Mg <sub>3</sub> H <sub>2</sub> (SiO <sub>3</sub> ) <sub>4</sub> ) not containing asbestos or asbestiform fibres |          |
| 7720-78-7                                                            | iron(II) sulfate                                                                                                      |          |
| 1317-61-9                                                            | Iron Oxide                                                                                                            |          |
| 1309-48-4                                                            | Magnesium Oxide                                                                                                       |          |
| 60-00-4                                                              | edetic acid                                                                                                           |          |
| 7757-93-9                                                            | Calcium Phosphate, dibasic                                                                                            |          |
| 1332-58-7                                                            | Kaolin                                                                                                                |          |
| 7783-20-2                                                            | Ammonium Sulfate                                                                                                      |          |
| 10043-35-3                                                           | Boric Acid                                                                                                            |          |
| 7758-99-8                                                            | Copper Sulfate Pentahydrate                                                                                           |          |
| 7733-02-0                                                            | Zinc Sulphate (anhydrous)                                                                                             |          |
| · <b>California Proposition 65:</b>                                  |                                                                                                                       |          |
| · <b>Chemicals known to cause cancer:</b>                            |                                                                                                                       |          |
| None of the ingredients are listed.                                  |                                                                                                                       |          |
| · <b>Chemicals known to cause reproductive toxicity for females:</b> |                                                                                                                       |          |
| None of the ingredients are listed.                                  |                                                                                                                       |          |
| · <b>Chemicals known to cause reproductive toxicity for males:</b>   |                                                                                                                       |          |
| None of the ingredients are listed.                                  |                                                                                                                       |          |
| · <b>Chemicals known to cause developmental toxicity:</b>            |                                                                                                                       |          |
| None of the ingredients are listed.                                  |                                                                                                                       |          |
| · <b>Carcinogenic categories:</b>                                    |                                                                                                                       |          |
| · <b>EPA (Environmental Protection Agency):</b>                      |                                                                                                                       |          |
| 11129-60-5                                                           | Manganese oxide                                                                                                       | D        |
| 10034-96-5                                                           | Manganese(II) Sulfate Monohydrate                                                                                     | D        |
| 10043-35-3                                                           | Boric Acid                                                                                                            | I (oral) |
| 7733-02-0                                                            | Zinc Sulphate (anhydrous)                                                                                             | D, I, II |
| 1314-13-2                                                            | Zinc Oxide                                                                                                            | D, I, II |

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|                                                                            |                                                                                                                       |                     |
|----------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------|---------------------|
| · <b>TLV (Threshold Limit Value established by ACGIH):</b>                 |                                                                                                                       |                     |
| 14807-96-6                                                                 | Talc (Mg <sub>3</sub> H <sub>2</sub> (SiO <sub>3</sub> ) <sub>4</sub> ) not containing asbestos or asbestiform fibres | A4                  |
| 1309-48-4                                                                  | Magnesium Oxide                                                                                                       | A4                  |
| 1332-58-7                                                                  | Kaolin                                                                                                                | 2 mg/m <sup>3</sup> |
| 10043-35-3                                                                 | Boric Acid                                                                                                            | A4                  |
| · <b>NIOSH-Ca (National Institute for Occupational Safety and Health):</b> |                                                                                                                       |                     |
| None of the ingredients are listed.                                        |                                                                                                                       |                     |

· **GHS label elements**

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

· **Hazard pictograms:**



GHS07

· **Signal word:** Warning

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

Ammonium Nitrate  
Magnesium Sulphate  
Ammonium phosphate monobasic  
Magnesium Oxide

· **Hazard statements:**

Causes skin and eye irritation.  
May cause respiratory irritation.

· **Precautionary statements:**

Avoid breathing dust/fume/gas/mist/vapors/spray.  
Use only outdoors or in a well-ventilated area.  
Wear protective gloves.  
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 INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.  
Call a poison center/doctor if you feel unwell.  
If skin irritation occurs: Get medical advice/attention.  
If eye irritation persists: Get medical advice/attention.  
If on skin: Wash with plenty of water.  
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 classified according with the latest version of the regulations on hazardous substances.

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| State Right to Know:                |                                                                                                                       |        |
|-------------------------------------|-----------------------------------------------------------------------------------------------------------------------|--------|
| CAS: 6484-52-2<br>RTECS: BR9050000  | Ammonium Nitrate<br>⚠ Ox. Sol. 3, H272; ⚠ Skin Irrit. 2, H315; Eye Irrit. 2A, H319; STOT SE 3, H335                   | 25-50% |
| CAS: 7778-80-5<br>RTECS: TT5900000  | Potassium Sulfate                                                                                                     | 25-50% |
| CAS: 7487-88-9<br>RTECS: OM 4500000 | Magnesium Sulphate<br>⚠ STOT SE 3, H335                                                                               | 5-10%  |
| CAS: 7722-76-1                      | Ammonium phosphate monobasic<br>⚠ Skin Irrit. 2, H315; STOT SE 3, H335; Eye Irrit. 2B, H320                           | 5-10%  |
| CAS: 14807-96-6<br>RTECS: WW2710000 | Talc (Mg <sub>3</sub> H <sub>2</sub> (SiO <sub>3</sub> ) <sub>4</sub> ) not containing asbestos or asbestiform fibres | 2-12%  |
|                                     | Polyurethane elastomer                                                                                                | ≤ 2.5% |
| 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: 07/28/2015 / -

#### 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  
PBT: Persistent, Bioaccumulative and Toxic  
vPvB: very Persistent and very Bioaccumulative  
Ox. Sol. 3: Oxidising Solids, Hazard Category 3  
Acute Tox. 4: Acute toxicity, Hazard Category 4  
Skin Irrit. 2: Skin corrosion/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 2: Hazardous to the aquatic environment - Acute Hazard, Category 2  
Aquatic Chronic 2: Hazardous to the aquatic environment - Chronic Hazard, Category 2

\* Data compared to the previous version altered.

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