

Safety Data Sheet (SDS)

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

Issue date 12/01/2016

Reviewed on 12/01/2016

1 Identification

- **Product Identifier**
- **Trade name: 18-2-12**
- **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 1-800-424-9300 or outside USA 1-703-527-3887

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

- **Signalword:** Warning
- **Hazard-determining components of labeling:**
Ammonium Sulfate
Sulfate of Potash Magnesia
Magnesium Sulphate
- **Hazard statements:**
H315+H320 Causes skin and eye irritation.
H335 May cause respiratory irritation.
- **Precautionary statements:**
P261 Avoid breathing dust/fume/gas/mist/vapors/spray.
P271 Use only outdoors or in a well-ventilated area.
P280 Wear protective gloves.
P264 Wash thoroughly after handling.
P305+P351+P338 If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P321 Specific treatment (see supplementary first aid instructions on this Safety Data Sheet).
P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.

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P312	Call a POISON CENTER/doctor if you feel unwell.
P332+P313	If skin irritation occurs: Get medical advice/attention.
P337+P313	If eye irritation persists: Get medical advice/attention.
P302+P352	IF ON SKIN: Wash with plenty of water.
P362+P364	Take off contaminated clothing and wash it before reuse.
P405	Store locked up.
P403+P233	Store in a well-ventilated place. Keep container tightly closed.
P501	Dispose of contents/container in accordance with local/regional/national/international regulations.

• **Unknown acute toxicity:**

This value refers to knowledge of known, established toxicological or ecotoxicological values.

18.1 % of the mixture consists of component(s) of unknown toxicity.

• **Classification system:** NFPA/HMIS Definitions: 0-Least, 1-Slight, 2-Moderate, 3-High, 4-Extreme

• **NFPA ratings (scale 0 - 4)**



• **HMIS-ratings (scale 0 - 4)**

HEALTH	1	Health = 1
FIRE	0	Fire = 0
REACTIVITY	0	Reactivity = 0

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

3 Composition/Information on Ingredients

• **Chemical characterization: Mixtures**

• **Description:** Mixture of substances listed below with non-hazardous additions.

• **Dangerous Components:**

CAS: 57-13-6 RTECS: YR 6250000	Urea	15-35%
CAS: 7783-20-2 RTECS: BS 4500000	Ammonium Sulfate ☞ Skin Irrit. 2, H315; Eye Irrit. 2A, H319; STOT SE 3, H335	15-35%
CAS: 14977-38-8	Sulfate of Potash Magnesia ☞ Skin Irrit. 2, H315; STOT SE 3, H335; Eye Irrit. 2B, H320	5-10%
CAS: 7487-88-9 RTECS: OM 4500000	Magnesium Sulphate ☞ STOT SE 3, H335	≤ 2.5%

• **Additional information:**

The exact percentages of the ingredients of this mixture are considered to be proprietary and are withheld in accordance with the provisions of paragraph (i) of §1910.1200 of 29 CFR 1910.1200 Trade Secrets.

4 First-Aid Measures

• **Description of first aid measures:**

• **General information:**

Symptoms of poisoning may occur after exposure to dust, fumes or particulates; seek medical attention if feeling unwell.

• **After inhalation:**

Supply fresh air. If required, provide artificial respiration. Consult doctor if symptoms persist.

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:**

If easy to do so, remove contact lenses if worn.

If eye irritation occurs, consult a doctor.

Rinse opened eye for several minutes under running water.

• **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:**

Mouth respiratory protective device.

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:**

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.

• **Protective Action Criteria for Chemicals**

• **PAC-1:**

7778-80-5	Potassium Sulfate	20 mg/m ³
57-13-6	Urea	30 mg/m ³
7783-20-2	Ammonium Sulfate	13 mg/m ³
7487-88-9	Magnesium Sulphate	20 mg/m ³
1317-61-9	Iron Oxide	21 mg/m ³
1309-48-4	Magnesium Oxide	30 mg/m ³
7720-78-7	iron(II) sulfate	8.2 mg/m ³
10034-96-5	Manganese(II) Sulfate Monohydrate	9.2 mg/m ³
7758-99-8	Copper Sulfate Pentahydrate	12 mg/m ³
7733-02-0	Zinc Sulphate (anhydrous)	15 mg/m ³
1314-13-2	Zinc Oxide	10 mg/m ³

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7631-95-0	Sodium Molybdate	3.2 mg/m3
· PAC-2:		
7778-80-5	Potassium Sulfate	220 mg/m3
57-13-6	Urea	280 mg/m3
7783-20-2	Ammonium Sulfate	140 mg/m3
7487-88-9	Magnesium Sulphate	220 mg/m3
1317-61-9	Iron Oxide	230 mg/m3
1309-48-4	Magnesium Oxide	120 mg/m3
7720-78-7	iron(II) sulfate	41 mg/m3
10034-96-5	Manganese(II) Sulfate Monohydrate	15 mg/m3
7758-99-8	Copper Sulfate Pentahydrate	32 mg/m3
7733-02-0	Zinc Sulphate (anhydrous)	97 mg/m3
1314-13-2	Zinc Oxide	15 mg/m3
7631-95-0	Sodium Molybdate	17 mg/m3
· PAC-3:		
7778-80-5	Potassium Sulfate	1,300 mg/m3
57-13-6	Urea	1,700 mg/m3
7783-20-2	Ammonium Sulfate	840 mg/m3
7487-88-9	Magnesium Sulphate	1,300 mg/m3
1317-61-9	Iron Oxide	1,400 mg/m3
1309-48-4	Magnesium Oxide	730 mg/m3
7720-78-7	iron(II) sulfate	250 mg/m3
10034-96-5	Manganese(II) Sulfate Monohydrate	90 mg/m3
7758-99-8	Copper Sulfate Pentahydrate	190 mg/m3
7733-02-0	Zinc Sulphate (anhydrous)	580 mg/m3
1314-13-2	Zinc Oxide	2,500 mg/m3
7631-95-0	Sodium Molybdate	100 mg/m3

7 Handling and Storage

· Handling

· Precautions for safe handling:

Avoid creating and breathing dust/fume/gas/mist/vapors/spray.

Ensure good ventilation/exhaustion at the workplace.

· 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:**

The following constituent is the only constituent of the product which has a PEL, TLV or other recommended exposure limit.

At this time, the other constituents have no known exposure limits.

57-13-6 Urea

WEEL Long-term value: 10 mg/m³

· **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

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.

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 cannot 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:

Gray

· **Odor:**

Slight

· **Odor threshold:**

Not determined.

· **pH-value:**

Not applicable.

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- **Change in condition**
 - Melting point/Melting range:** Not determined.
 - Boiling point/Boiling range:** 1500 °C (2732 °F)
- **Flash point:** None
- **Flammability (solid, gaseous):** Not determined.
- **Ignition temperature:** Not determined.
- **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.
- **Solvent content:**
 - Organic solvents:** 0.0 %
 - Solids content:** 99.2 %
- **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.

11 Toxicological Information

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

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

7778-80-5 Potassium Sulfate

Oral	LD50	6600 mg/kg (Rat)
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Inhalative	LC50/96 hours	680 mg/l (Pimephales)
57-13-6 Urea		
Oral	LD50	8471 mg/kg (Rat)
7783-20-2 Ammonium Sulfate		
Oral	LD50	2840 mg/kg (Rat)
Inhalative	LC50/96 hours	36.7 mg/l (Trout)
		433 mg/l (Water flea)
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)

• **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:**

57-13-6 Urea

EC50 >10000 mg/l (Daphnia)

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:**
Observe all federal, state and local environmental regulations when disposing of this material.
- **Uncleaned packagings**
- **Recommendation:** Disposal must be made according to official regulations.

14 Transport Information

- **UN-Number:**
- **DOT, ADR, IMDG, IATA** Non-Regulated Material
- **UN proper shipping name:**
- **DOT, ADR, IMDG, IATA** Non-Regulated Material
- **Transport hazard class(es):**
- **DOT, ADR, IMDG, IATA**
- **Class:** Non-Regulated Material
- **Packing group:**
- **DOT, ADR, IMDG, IATA** Non-Regulated Material
- **Environmental hazards:** Not applicable.
- **Special precautions for user:** Not applicable.
- **Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code:** Not applicable.
- **UN "Model Regulation":** Non-Regulated Material

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):**

7783-20-2 Ammonium Sulfate

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):**

7778-80-5 Potassium Sulfate

57-13-6 Urea

7783-20-2 Ammonium Sulfate

7447-40-7 Potassium Chloride

7487-88-9 Magnesium Sulphate

1317-61-9 Iron Oxide

1309-48-4 Magnesium Oxide

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7720-78-7	iron(II) sulfate
25791-96-2	Poly(oxypropylene) triol
1332-58-7	Trade Secret
7733-02-0	Zinc Sulphate (anhydrous)
1314-13-2	Zinc Oxide
7631-95-0	Sodium Molybdate

• **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.

• **New Jersey Right-to-Know List:**

1309-48-4	Magnesium Oxide
7720-78-7	iron(II) sulfate
1332-58-7	Trade Secret
7733-02-0	Zinc Sulphate (anhydrous)
1314-13-2	Zinc Oxide

• **New Jersey Special Hazardous Substance List:**

None of the ingredients are listed.

• **Pennsylvania Right-to-Know List:**

7783-20-2	Ammonium Sulfate
1309-48-4	Magnesium Oxide
7720-78-7	iron(II) sulfate
1332-58-7	Trade Secret
7733-02-0	Zinc Sulphate (anhydrous)
1314-13-2	Zinc Oxide

• **Pennsylvania Special Hazardous Substance List:**

7783-20-2	Ammonium Sulfate	E
7720-78-7	iron(II) sulfate	E
7733-02-0	Zinc Sulphate (anhydrous)	E
1314-13-2	Zinc Oxide	E

• **Carcinogenic categories:**

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

57-13-6	Urea	II
11129-60-5	Manganese oxide	D
10034-96-5	Manganese(II) Sulfate Monohydrate	D
7733-02-0	Zinc Sulphate (anhydrous)	D, I, II

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1314-13-2	Zinc Oxide	D, I, II
• TLV (Threshold Limit Value established by ACGIH):		
1309-48-4	Magnesium Oxide	A4
1332-58-7	Trade Secret	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).

• **Hazard pictograms:**



GHS07

• **Signal word:** Warning

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

Ammonium Sulfate
Sulfate of Potash Magnesia
Magnesium Sulphate

• **Hazard statements:**

H315+H320 Causes skin and eye irritation.
H335 May cause respiratory irritation.

• **Precautionary statements:**

P261 Avoid breathing dust/fume/gas/mist/vapors/spray.
P271 Use only outdoors or in a well-ventilated area.
P280 Wear protective gloves.
P264 Wash thoroughly after handling.
P305+P351+P338 If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P321 Specific treatment (see supplementary first aid instructions on this Safety Data Sheet).
P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P312 Call a POISON CENTER/doctor if you feel unwell.
P332+P313 If skin irritation occurs: Get medical advice/attention.
P337+P313 If eye irritation persists: Get medical advice/attention.
P302+P352 IF ON SKIN: Wash with plenty of water.
P362+P364 Take off contaminated clothing and wash it before reuse.
P405 Store locked up.
P403+P233 Store in a well-ventilated place. Keep container tightly closed.
P501 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.

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

16 Other Information

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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:** 12/01/2016 / -

• **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
NIOSH: National Institute for Occupational Safety and Health
OSHA: Occupational Safety & Health Administration
TLV: Threshold Limit Value
PEL: Permissible Exposure Limit
REL: Recommended Exposure Limit
Skin Irrit. 2: Skin corrosion/irritation – Category 2
Eye Irrit. 2A: Serious eye damage/eye irritation – Category 2A
Eye Irrit. 2B: Serious eye damage/eye irritation – Category 2B
STOT SE 3: Specific target organ toxicity (single exposure) – Category 3

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

SDS created by MSDS Authoring Services www.msdsauthoring.com +1-877-204-9106