

Safety Data Sheet (SDS)

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

Issue date 05/15/2018

Reviewed on 05/15/2018

1 Identification

- **Product Identifier**
- **Trade Name:** 13-4-8
- **Relevant identified uses of the substance or mixture and uses advised against:**
- **Product Description:** Fertilizer
- **Details of the Supplier of the Safety Data Sheet:**
- **Manufacturer/Supplier:**
Florikan ESA, LLC
6801 Energy Ct. Suite 100
Sarasota, FL 34234
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:**
Aquatic Acute 3 H402 Harmful to aquatic life.
Aquatic Chronic 3 H412 Harmful to aquatic life with long lasting effects.
- **Label elements:**
- **GHS label elements**
The product is classified and labeled according to the Globally Harmonized System (GHS).
- **Hazard pictograms:** Non-Regulated Material
- **Signal word:** Non-Regulated Material
- **Hazard statements:**
H402 Harmful to aquatic life.
H412 Harmful to aquatic life with long lasting effects.
- **Precautionary statements:**
P273 Avoid release to the environment.
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.
8.8 % 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	0	Health = 0
FIRE	0	Fire = 0
REACTIVITY	0	Physical Hazard = 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.

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· Dangerous Components:		
CAS: 13397-24-5	Gypsum (Calcium sulfate)	15-35%
CAS: 7487-88-9 RTECS: OM 4500000	Magnesium Sulphate ⚠ STOT SE 3, H335	2-12%
CAS: 7720-78-7 RTECS: NO 8510000	iron(II) sulfate ⚠ Acute Tox. 4, H302; Skin Irrit. 2, H315; Eye Irrit. 2A, H319	2-12%
CAS: 1309-48-4	Magnesium Oxide ⚠ Acute Tox. 4, H302	≤2.5%
CAS: 7727-37-9 RTECS: QW 9700000	Nitrogen ⚠ Press. Gas, H280; Simple Asphyxiant	≤2.5%
CAS: 7758-99-8 RTECS: GL 8800000	Copper Sulfate Pentahydrate ⚠ Eye Dam. 1, H318; ⚠ Aquatic Acute 1, H400; Aquatic Chronic 1, H410; ⚠ Acute Tox. 4, H302	≤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%

· 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.

· After skin contact:

Immediately wash with water and soap and rinse thoroughly.
If skin irritation occurs, consult a doctor.

· After eye contact:

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: Use fire fighting measures that suit the environment.

· For safety reasons unsuitable extinguishing agents: No further relevant information.

· Special hazards arising from the substance or mixture: No further relevant information available.

· Advice for firefighters

· Special protective equipment for firefighters:

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.

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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.
- **Protective Action Criteria for Chemicals**

• PAC-1:

7778-80-5	Potassium Sulfate	20 mg/m ³
7487-88-9	Magnesium Sulphate	20 mg/m ³
7720-78-7	iron(II) sulfate	8.2 mg/m ³
1317-61-9	Iron Oxide	21 mg/m ³
1309-48-4	Magnesium Oxide	30 mg/m ³
7727-37-9	Nitrogen	7.96E+05 ppm
10034-96-5	Manganese(II) Sulfate Monohydrate	9.2 mg/m ³
7439-89-6	Iron	3.2 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
7631-95-0	Sodium Molybdate	3.2 mg/m ³

• PAC-2:

7778-80-5	Potassium Sulfate	220 mg/m ³
7487-88-9	Magnesium Sulphate	220 mg/m ³
7720-78-7	iron(II) sulfate	41 mg/m ³
1317-61-9	Iron Oxide	230 mg/m ³
1309-48-4	Magnesium Oxide	120 mg/m ³
7727-37-9	Nitrogen	8.32E+05 ppm
10034-96-5	Manganese(II) Sulfate Monohydrate	15 mg/m ³
7439-89-6	Iron	35 mg/m ³
7758-99-8	Copper Sulfate Pentahydrate	32 mg/m ³
7733-02-0	Zinc Sulphate (anhydrous)	97 mg/m ³
1314-13-2	Zinc Oxide	15 mg/m ³
7631-95-0	Sodium Molybdate	17 mg/m ³

• PAC-3:

7778-80-5	Potassium Sulfate	1,300 mg/m ³
7487-88-9	Magnesium Sulphate	1,300 mg/m ³
7720-78-7	iron(II) sulfate	250 mg/m ³

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1317-61-9	Iron Oxide	1,400 mg/m ³
1309-48-4	Magnesium Oxide	730 mg/m ³
7727-37-9	Nitrogen	8.69E+05 ppm
10034-96-5	Manganese(II) Sulfate Monohydrate	90 mg/m ³
7439-89-6	Iron	150 mg/m ³
7758-99-8	Copper Sulfate Pentahydrate	190 mg/m ³
7733-02-0	Zinc Sulphate (anhydrous)	580 mg/m ³
1314-13-2	Zinc Oxide	2,500 mg/m ³
7631-95-0	Sodium Molybdate	100 mg/m ³

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.
- **Control parameters:**
- **Components with occupational exposure limits:**
The following constituents are the only constituents of the product which have a PEL, TLV or other recommended exposure limit.
At this time, the other constituents have no known exposure limits.

13397-24-5 Gypsum (Calcium sulfate)	
REL	Long-term value: 10* 5** mg/m ³ *Total dust; **Respirable fraction
TLV	Long-term value: 10* mg/m ³ *as inhalable fraction
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
1309-48-4 Magnesium Oxide	
PEL	Long-term value: 15* mg/m ³ fume; *total particulate
TLV	Long-term value: 10* mg/m ³ *as inhalable fraction

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Trade Name: 13-4-8

7727-37-9 Nitrogen

TLV withdrawn TLV, see App. F; simple asphyxiant

- **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.
- **Breathing equipment:** Not required.
- **Protection of hands:** Not required.
- **Material of gloves:** Not applicable.
- **Penetration time of glove material:** Not applicable.
- **Eye protection:** Not required.
- **Limitation and supervision of exposure into the environment:**
Keep away from drains, surface and ground waters.
Avoid release into the environment.

9 Physical and Chemical Properties

- **Information on basic physical and chemical properties**
- **General Information**
- **Appearance:**
 - Form:** Granulate
 - Color:** Brownish
- **Odour:** Slight
- **Odor threshold:** Not determined.
- **pH-value:** Not applicable.
- **Change in condition**
 - Melting point/Melting range:** Not determined.
 - Boiling point/Boiling range:** $\geq 1,689\text{ }^{\circ}\text{C}$ ($\geq 3,072.2\text{ }^{\circ}\text{F}$)
- **Flash point:** None
- **Flammability (solid, gaseous):** Not determined.
- **Ignition temperature:** Not applicable
- **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.

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- **Solubility in / Miscibility with:**
 - Water:** Soluble.
- **Partition coefficient (n-octanol/water):** Not determined.
- **Viscosity:**
 - Dynamic:** Not applicable.
 - Kinematic:** Not applicable.
- **Solvent content:**
 - VOC content:** 0.00 %
 - 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.

11 Toxicological Information

- **Information on toxicological effects:**
- **Acute toxicity:**
- **LD/LC50 values that are relevant for classification:**

7778-80-5 Potassium Sulfate

Oral	LD50	6,600 mg/kg (Rat)
Inhalative	LC50/96 hours	680 mg/l (Pimephales)

13397-24-5 Gypsum (Calcium sulfate)

Oral	LD50	>2,000 mg/kg (Rat)
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7487-88-9 Magnesium Sulphate

Oral	LD50	>2,000 mg/kg (Rat)
Inhalative	LC50/4 h	>2,000 mg/l (Rabbit)
	LC50/96 hours	2,820 mg/l (Pimephales)

7720-78-7 iron(II) sulfate

Oral	LD50	1,520 mg/kg (Mouse)
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1309-48-4 Magnesium Oxide

Oral	LD50	810 mg/kg (Mouse)
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7758-99-8 Copper Sulfate Pentahydrate

Oral	LD50	300 mg/kg (Rat)
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- **Primary irritant effect:**
- **On the skin:** No irritating effect.
- **On the eye:** No irritating effect.
- **Additional toxicological information:**
When used and handled according to specifications, the product does not have any harmful effects according to our experience and the information provided to us.

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· **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:**

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

7487-88-9 Magnesium Sulphate

EC50 2,700 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:** Harmful to 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.

Harmful to 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.

Observe all federal, state and local environmental regulations when disposing of this material.

· **Uncleaned packaging**

· **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/ADN, IMDG, IATA**

Non-Regulated Material

· **UN proper shipping name:**

· **DOT, ADR/ADN, IMDG, IATA**

Non-Regulated Material

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- **Transport hazard class(es):**
- **DOT, ADR/ADN, IMDG, IATA**
- **Class:** Non-Regulated Material
- **Packing group:**
- **DOT, ADR/ADN, 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
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- **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):**

7778-80-5	Potassium Sulfate
7487-88-9	Magnesium Sulphate
7720-78-7	iron(II) sulfate
1317-61-9	Iron Oxide
1309-48-4	Magnesium Oxide
7727-37-9	Nitrogen
7704-34-9	Sulfur
1332-58-7	Kaolin
15708-41-5	EDTA feric sodium complex
7439-89-6	Iron
7733-02-0	Zinc Sulphate (anhydrous)
1314-13-2	Zinc Oxide
7631-95-0	Sodium Molybdate
1332-58-7	Kaolin

- **TSCA new (21st Century Act) (Substances not listed)**

13397-24-5	Gypsum (Calcium sulfate)
7758-99-8	Copper Sulfate Pentahydrate

- **California Proposition 65:**

- **Chemicals known to cause cancer:**

None of the ingredients are listed.

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• 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:		
13397-24-5	Gypsum (Calcium sulfate)	
7720-78-7	iron(II) sulfate	
1309-48-4	Magnesium Oxide	
7727-37-9	Nitrogen	
7704-34-9	Sulfur	
1332-58-7	Kaolin	
7733-02-0	Zinc Sulphate (anhydrous)	
1314-13-2	Zinc Oxide	
1332-58-7	Kaolin	
• New Jersey Special Hazardous Substance List:		
None of the ingredients are listed.		
• Pennsylvania Right-to-Know List:		
13397-24-5	Gypsum (Calcium sulfate)	
7720-78-7	iron(II) sulfate	
1309-48-4	Magnesium Oxide	
7727-37-9	Nitrogen	
7704-34-9	Sulfur	
1332-58-7	Kaolin	
7733-02-0	Zinc Sulphate (anhydrous)	
1314-13-2	Zinc Oxide	
1332-58-7	Kaolin	
• Pennsylvania Special Hazardous Substance List:		
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):		
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
1332-58-7	Kaolin	2 mg/m ³
1332-58-7	Kaolin	2 mg/m ³

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• **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:** Non-Regulated Material

• **Signal word:** Non-Regulated Material

• **Hazard statements:**

H402 Harmful to aquatic life.

H412 Harmful to aquatic life with long lasting effects.

• **Precautionary statements:**

P273 Avoid release to the environment.

P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

• **National regulations:**

None of the 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:** 05/15/2018 / -

• **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)

HMS: Hazardous Materials Identification System (USA)

VOC: Volatile Organic Compounds (USA, EU)

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

Press. Gas: Gases under pressure – Dissolved gas

Acute Tox. 4: Acute toxicity – Category 4

Skin Irrit. 2: Skin corrosion/irritation – Category 2

Eye Dam. 1: Serious eye damage/eye irritation – Category 1

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

STOT SE 3: Specific target organ toxicity (single exposure) – Category 3

Aquatic Acute 1: Hazardous to the aquatic environment - acute aquatic hazard – Category 1

Aquatic Acute 3: Hazardous to the aquatic environment - acute aquatic hazard – Category 3

Aquatic Chronic 1: Hazardous to the aquatic environment - long-term aquatic hazard – Category 1

Aquatic Chronic 3: Hazardous to the aquatic environment - long-term aquatic hazard – Category 3

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

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