

## Safety Data Sheet

### Section 1: Identification

**Product Name:** Ferrous Sulfate Monohydrate

**Product Type:** Solid

**Recommended Uses:** For further manufacturing of feed. For Fertilizer.

**Synonyms:** Copperas, Iron (II) Sulfate

**Company Identification:**

Origination Inc.

1300 McKnight Road North

Maplewood, MN 55119

**For information, call:** 1-800-625-6079

**Emergency Number:** 1-800-625-6079

**For CHEMTREC assistance, call:** 1-800-424-9300

**For International CHEMTREC assistance, call:** 703-527-3887

### Section 2: Hazard(s) Identification

#### Classification

Acute Toxicity, Oral	Category 4
Skin irritation	Category 2
Eye Irritation	Category 2A

#### GHS Label elements, including precautionary statements

**Pictogram:**



**Signal word:** Warning

**Hazard statement(s):** Harmful if swallowed.

Causes skin irritation.

Causes serious eye irritation.

**Precautionary statement(s):** Wash skin thoroughly after handling. Do not eat, drink, or smoke when using this product. Wear protective gloves/eye protection/face protection.

**IF SWALLOWED:** Call a POISON CENTER or doctor/ physician if you feel unwell.

**IF ON SKIN:** Wash with plenty of soap and water.

**IF IN EYES:** Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Specific treatment (see supplemental first aid instructions on this label). Rinse mouth.

**If skin irritation occurs:** Get medical advice/ attention.

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**If eye irritation persists:** Get medical advice/ attention. Remove contaminated clothing and wash before reuse. Dispose of contents/container to an approved waste disposal plant.

**Hazards not otherwise classified (HNOC):** None

## Section 3: Composition / Information on Ingredients

### Substances

Synonyms:	Ferrous Sulfate Monohydrate
Formula:	FeSO <sub>4</sub> · 1H <sub>2</sub> O
Molecular Weight:	169.92 g/mol
CAS-No.:	17375-41-6
Weight %:	>99%

### Hazardous components

Component:	Classification:
Ferrous Sulfate Monohydrate	Acute Tox. 4; Skin Irrit. 2; Eye Irrit. 2A; H302, H315, H319

## Section 4: First Aid Measures

### Description of first aid measures

**General advice:** Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.

**If inhaled:** If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

**In case of skin contact:** Wash off with soap and plenty of water. Consult a physician.

**In case of eye contact:** Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

**If swallowed:** Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

**Most important symptoms and effects, both acute and delayed:** The most important known symptoms and effects are described in the labelling (see Section 2.2) and/or in Section 11.

**Indication of any immediate medical attention and special treatment needed:** No data available.

## Section 5: Fire Fighting Measures

### Extinguishing media

**Suitable extinguishing media:** Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

**Special hazards arising from the substance or mixture:** Sulphur oxides, Iron oxides.

**Advice for firefighters:** Wear self-contained breathing apparatus for firefighting if necessary.

**Further information:** The product itself does not burn.

## Section 6: Accidental Release Measures

**Personal precautions, protective equipment and emergency procedures:** Use personal protective equipment. Avoid dust formation. Avoid breathing vapors, mist, or gas. Ensure adequate ventilation. Avoid breathing dust. For personal protection see Section 8.

**Environmental precautions:** Do not let product enter drains.

**Methods and materials for containment and cleaning up:** Pick up and arrange disposal without creating dust. Sweep up and shovel. Keep in suitable, closed containers for disposal.

**Reference to other sections:** For disposal see Section 13.

## Section 7: Handling and Storage

**Precautions for safe handling:** Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Provide appropriate exhaust ventilation at places where dust is formed. For precautions see Section 2.

**Conditions for safe storage, including any incompatibilities:** Keep container tightly closed in a dry and well-ventilated place. Air sensitive. Store under inert gas. Hygroscopic.

**Specific end use(s):** Apart from the uses mentioned in Section 1 no other specific uses are stipulated.

## Section 8: Exposure Controls, Personal Protection

### Control Parameters

#### Components with workplace control parameters

Component	CAS-No.	Value	Control parameters	Basis
Ferrous sulfate Monohydrate	17375-41-6	TWA	1 mg/m <sup>3</sup>	USA. ACGIH Threshold Limit Values (TLV)
	Remarks	Upper Respiratory Tract & skin irritation varies		
		TWA	1 mg/m <sup>3</sup>	USA. OSHA - TABLE Z-1 Limits for Air Contaminants - 1910.1000
		TWA	1 mg/m <sup>3</sup>	USA. NIOSH Recommended Exposure Limits

### Exposure Controls

**Appropriate engineering controls:** Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

### Personal Protective Equipment

**Eye/face protection:** Safety glasses with side-shields.

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**Skin protection:** Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

**Body protection:** Complete suit protecting against chemicals, the type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

**Respiratory protection:** For nuisance exposures use a particle respirator. For higher level protection use type, wear NIOSH approved air-purifying respirator with cartridges/canisters.

**Control of environmental exposure:** Do not let product enter drains.

## Section 9: Physical and Chemical Properties

### Physical and Chemical Properties

**Physical State:** Solid

**Appearance:** Grey, acidic/sour **Odor:** No data available

**Color:** Grey **Odor Threshold:** No data available

**pH:** 3.0 – 4.0 @ 50 g/l @ 25° C (77° F)

**Melting/freezing point Melting point/range:** 64° C (147° F) Loses water

**Flash Point:** No data available

**Evaporation Rate:** No data available

**Flammability (solid, gas):** No data available

**Upper flammability limit:** No data available

**Lower flammability limit:** N/A

**Vapor pressure:** No data available

**Vapor density:** No data available

**Specific Gravity:** No data available

**Water solubility:** No data available

**Solubility in other solvents:** No data available

**Partition coefficient: n-octanol/water:** No data available

**Autoignition temperature:** No data available

**Decomposition temperature:** No data available

**Kinematic viscosity:** No data available

**Dynamic viscosity:** No data available

**Explosive properties:** No data available

**Oxidizing properties:** No data available

**Bulk density:** 1,100 kg/m<sup>3</sup>

## Section 10: Stability and Reactivity

**Reactivity:** No data available.

**Chemical Stability:** Stable under recommended storage conditions.

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**Possibility of Hazardous Reactions:** No data available.

**Hazardous:** Polymerization: No data available.

**Conditions to Avoid:** No data available.

**Incompatible Materials:** Strong oxidizing agents.

**Hazardous Decomposition Products:** Other decomposition products – no data available. In the event of a fire see Section 5.

## Section 11: Toxicological Information

### Information on likely routes of exposure

#### Product information

**Inhalation:** No data available

**Eye contact** No data available

**Skin contact:** No data available

**Ingestion:** Harmful if swallowed

#### Component Information

#### Information on toxicological effects

**Symptoms** No data available

#### Delayed and immediate effects as well as chronic effects from short & long-term exposure

**Sensitization:** No data available.

**Mutagenic effects:** No data available.

**Carcinogenicity:** No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

**STOT-single exposure:** No data available.

**STOT-repeated exposure:** No data available.

**Chronic toxicity:** No data available.

**Target organ exposure:** No data available.

**Aspiration hazard:** No data available.

#### Numerical measure of toxicity product information

The following values are calculated based on Section 3 of the GHS document: No data available.

## Section 12: Ecological Information

**Ecotoxicity:** No data available.

**Persistence and Degradability:** No data available.

**Bioaccumulation:** No data available.

**Other adverse effects:** No data available.

## Section 13: Disposal Considerations (non-mandatory)

### Waste treatment methods

**Disposal methods:** Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material.

**Contaminated packaging:** Dispose of as unused product.

## Section 14: Transport Information

**DOT (US)** UN Number: 3077 Class: 9 Packing group: III  
Proper shipping name Environmentally hazardous substance, solid, n.o.s.  
(Ferrous Sulfate Monohydrate)  
Reportable Quantity (RQ): 1,000 lbs  
Marine pollutant: No  
Poison Inhalation Hazard: No

**IMDG:** Not dangerous goods.

**IATA:** Not dangerous goods.

## Section 15: Regulatory Information

### INTERNATIONAL INVENTORIES

**TSCA:** CAS# 17375-41-6 is not on the TSCA Inventory because it is a hydrate. It is considered to be listed if the CAS# for the anhydrous form is on the inventory (40CFR720.3(u)(2)).

CAS# 17375-41-6 is listed on the TSCA Inventory.

**DSL:** CAS# 17375-41-6 is listed on Canada's DSL List.

### US Federal Regulations

**SARA 313:** SARA 313: This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA + Title III, Section 313.

**SARA 311/312 Hazard Categories:** Acute health hazard  
Chronic health hazard

**CWA (Clean Water Act)** Section 311 Hazardous Substances (40 CFR 117.3)  
Sulfuric acid, Iron (2) salt (1:1), Monohydrate  
Reportable quantity: 1000 lbs.

**CERCLA** (40 CFR 302.4)  
Sulfuric acid, Iron (2) salt (1:1), Monohydrate  
Reportable quantity: 1000 lbs.

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## US State Regulations

**California Prop. 65 Components:** This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

## US State Right-to-Know Regulations

### Massachusetts Right-to-Know Components:

Ferrous Sulfate Monohydrate CAS-No. 17375-41-6 Revision Date: 1993-04-24

### Pennsylvania Right-to-Know Components:

Ferrous Sulfate Monohydrate CAS-No. 17375-41-6 Revision Date: 1993-04-24

### New Jersey Right-to-Know Components:

Ferrous Sulfate Monohydrate CAS-No. 17375-41-6 Revision Date: 1993-04-24

## International Regulations

**Canada WHMIS Hazard Class:** Uncontrolled product; Disclosure at 1%.

## Section 16: Additional Information

**NFPA Rating** Health hazard: 2 Fire Hazard: 0 Reactivity Hazard: 0  
**HMIS Rating** Health hazard: 2 Chronic Health Hazard: Flammability: 0 Physical Hazard 0

**Prepared by:** Origination, Inc.

**Prepared:** May, 2015

## Disclaimer:

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