

Safety Data Sheet

Issue Date: 21-Feb-2018

Revision Date: 11-June-2019

Version 6

1. IDENTIFICATION

Product Identifier

Product Name Ferrous Sulfate Monohydrate

Other means of identification

SDS # VLS-254

Product Code FFN-05055

Synonyms Copperas, Iron (II) Sulfate.

UN/ID No UN3077

Recommended use of the chemical and restrictions on use

Recommended Use Fertilizer, industrial and animal feed.

Details of the supplier of the safety data sheet

Supplier Address

Verdesian Life Sciences, U.S., LLC.
1001 Winstead Drive, Suite 480
Cary, NC 27513

Emergency Telephone Number

Company Phone Number Business Phone: (800) 868-6446

Fax: (919) 535-3652

Emergency Telephone (24 hr) INFOTRAC 1-352-323-3500 (International)
1-800-535-5053 (North America)

2. HAZARDS IDENTIFICATION

Appearance gray crystals

Physical state Solid

Odor acidic/ sour

Classification

Acute toxicity - Oral	Category 4
Skin corrosion/irritation	Category 2
Serious eye damage/eye irritation	Category 2A

Signal Word

Warning

Hazard statements

Harmful if swallowed

Causes skin irritation

Causes serious eye irritation



Precautionary Statements - Prevention

Wash face, hands and any exposed skin thoroughly after handling
 Do not eat, drink or smoke when using this product
 Wear protective gloves/eye protection/face protection

Precautionary Statements - Response

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
 If eye irritation persists: Get medical advice/attention
 IF ON SKIN: Wash with plenty of water and soap
 Take off contaminated clothing and wash it before reuse
 If skin irritation occurs: Get medical advice/attention
 IF SWALLOWED: Call a POISON CENTER or doctor if you feel unwell
 Rinse mouth

Precautionary Statements - Disposal

Dispose of contents/container to an approved waste disposal plant

3. COMPOSITION/INFORMATION ON INGREDIENTS

Synonyms Copperas, Iron (II) Sulfate.

Chemical Name	CAS No.	Weight-%
Iron (II) Sulfate monohydrate	17375-41-6	>99

**If Chemical Name/CAS No is "proprietary" and/or Weight-% is listed as a range, the specific chemical identity and/or percentage of composition has been withheld as a trade secret. **

4. FIRST AID MEASURES

First Aid Measures

Eye Contact	Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.
Skin Contact	Wash with plenty of soap and water. Take off contaminated clothing and wash it before reuse. If skin irritation occurs: Get medical advice/attention.
Inhalation	Remove to fresh air.
Ingestion	Call a poison center or doctor/physician if you feel unwell. Rinse mouth.

Most important symptoms and effects

Symptoms Harmful if swallowed. Causes skin irritation. Causes serious eye irritation.

Indication of any immediate medical attention and special treatment needed

Notes to Physician Treat symptomatically.

5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media

Use extinguishing media suitable for surrounding materials. Dry chemical, carbon dioxide, foam, water spray or fog.

Unsuitable Extinguishing Media Not determined.

Specific Hazards Arising from the Chemical

None known.

Hazardous Combustion Products May produce gases such as oxides of sulfur and iron.

Protective equipment and precautions for firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal Precautions Avoid dust formation. Use personal protective equipment as required.

Environmental precautions

Environmental precautions Prevent material from entering public sewer systems or any waterways. Do not flush to drain. See Section 12 for additional Ecological Information.

Methods and material for containment and cleaning up

Methods for Containment Prevent further leakage or spillage if safe to do so.

Methods for Clean-Up Carefully sweep, scoop or vacuum and place in suitable container. Avoid generating dust or accumulating dust. Avoid dust dispersal in the air (i.e. cleaning dust surfaces with compressed air). If possible, complete cleanup on a dry basis. Spilled material can be a slipping hazard. Eliminate flames, sparks, excessive temperatures and oxidizing agents. Non-sparking tools should be used.

7. HANDLING AND STORAGE

Precautions for safe handling

Advice on Safe Handling Wash face, hands and any exposed skin thoroughly after handling. Do not eat, drink or smoke when using this product. Wear protective gloves/eye protection/face protection. Avoid breathing dusts. Avoid contact with skin and eyes. Minimize dust generation and accumulation.

Conditions for safe storage, including any incompatibilities

Storage Conditions Store in closed, properly labeled containers in a cool, ventilated area. Do not transfer contents to bottles or other unlabeled containers. Keep away from heat, open flames and oxidizing agents.

Incompatible Materials Oxidizing agents. Bases. Acids.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure Guidelines

Chemical Name	ACGIH TLV	OSHA PEL	NIOSH IDLH
Iron (II) Sulfate monohydrate 17375-41-6	TWA: 1 mg/m ³ Fe	(vacated) TWA: 1 mg/m ³ Fe	TWA: 1 mg/m ³ Fe

Appropriate engineering controls

Engineering Controls Ensure ventilation and dust-handling systems prevent the escape of dust into work areas and there is no leakage from equipment.

Individual protection measures, such as personal protective equipment

Eye/Face Protection	To avoid contact with eyes, wear chemical goggles or shield safety glasses. An emergency eyewash or water supply should be readily accessible to the work area.
Skin and Body Protection	To avoid contact with skin, wear long pants, long-sleeved shirt, socks, shoes and chemical-resistant gloves. An emergency shower or water supply should be readily accessible to the work area.
Respiratory Protection	Nuisance dust mask 3M type 8710 or equivalent. (Recommended).
General Hygiene Considerations	Handle in accordance with good industrial hygiene and safety practice.

9. PHYSICAL AND CHEMICAL PROPERTIES**Information on basic physical and chemical properties**

Physical state	Solid	Odor	Acidic/ sour
Appearance	Gray crystals	Odor Threshold	No data available
Color	Gray		
<u>Property</u>	<u>Values</u>	<u>Remarks • Method</u>	
pH	3.0-4.0		
Melting point / freezing point	No data available		
Boiling Point / Boiling Range	No data available		
Flash Point	No data available		
Evaporation Rate	No data available		
Flammability (Solid, Gas)	No data available		
Flammability Limit in Air			
Upper Flammability Limit	No data available		
Lower Flammability Limit	No data available		
Vapor Pressure	No data available		
Vapor Density	No data available		
Relative Density	No data available		
Water Solubility	33 g/100 g H ₂ O	@ 20°C (68°F)	
Solubility in other solvents	No data available		
Partition Coefficient	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	Dust can form an explosive mixture with air		
Oxidizing Properties	Not determined		
<u>Other Information</u>			
Bulk Density	10,040 kg/m ³		

10. STABILITY AND REACTIVITY**Reactivity**

No data available.

Chemical Stability

Stable under recommended storage conditions.

Possibility of Hazardous Reactions

None under normal processing.

Hazardous Polymerization Will not occur.

Conditions to Avoid

Minimize dust generation and accumulation. Incompatible Materials.

Incompatible Materials

Oxidizing agents. Bases. Acids.

Hazardous Decomposition Products

May produce gases such as oxides of sulfur and iron.

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure**Product Information**

Eye Contact Avoid contact with eyes.

Skin Contact Avoid contact with skin.

Inhalation Do not inhale.

Ingestion Harmful if swallowed.

Component Information

Not available

Information on physical, chemical and toxicological effects

Symptoms Please see section 4 of this SDS for symptoms.

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

Skin corrosion/irritation Causes skin irritation.

Serious eye damage/eye irritation Causes serious eye irritation.

Carcinogenicity Based on the information provided, this product does not contain any carcinogens or potential carcinogens as listed by OSHA, IARC or NTP.

Numerical measures of toxicity

The following values are calculated based on chapter 3.1 of the GHS document.

ATEmix (oral) 500.00 mg/kg

12. ECOLOGICAL INFORMATION

Ecotoxicity

The product is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

Component Information

Not available

Persistence/Degradability

Not determined.

Bioaccumulation

Not determined.

Mobility

Not determined

Other Adverse Effects

Not determined

13. DISPOSAL CONSIDERATIONS**Waste Treatment Methods****Disposal of Wastes**

Disposal should be in accordance with applicable regional, national and local laws and regulations.

Contaminated Packaging

Disposal should be in accordance with applicable regional, national and local laws and regulations.

14. TRANSPORT INFORMATION**Note**

Please see current shipping paper for most up to date shipping information, including exemptions and special circumstances.

DOTDOT in packages less than 1,000 lbs
Not regulated

DOT in packages greater than 1,000 lbs

UN/ID No

UN3077

Proper Shipping Name

Environmentally hazardous substances, solid, n.o.s. (Ferrous Sulfate Monohydrate)

Hazard Class

9

Packing Group

III

Reportable Quantity (RQ)

1,000 lbs.

IATA

Not regulated

IMDG

Not regulated

15. REGULATORY INFORMATION**International Inventories**

Chemical Name	TSCA	DSL/NDSL	EINECS/E LINCS	ENCS	IECSC	KECL	PICCS	AICS
Iron (II) Sulfate monohydrate	Active							X

Legend:*TSCA - United States Toxic Substances Control Act Section 8(b) Inventory**DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List**EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances**ENCS - Japan Existing and New Chemical Substances**IECSC - China Inventory of Existing Chemical Substances**KECL - Korean Existing and Evaluated Chemical Substances**PICCS - Philippines Inventory of Chemicals and Chemical Substances**AICS - Australian Inventory of Chemical Substances*

US Federal Regulations

CERCLA

This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355).

SARA 311/312 Hazard Categories

Acute Health Hazard	Yes
Chronic Health Hazard	No
Fire Hazard	No
Sudden Release of Pressure Hazard	No
Reactive Hazard	No

SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372

CWA (Clean Water Act)

This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42)

US State Regulations

California Proposition 65

This product does not contain any Proposition 65 chemicals.

U.S. State Right-to-Know Regulations

Chemical Name	New Jersey	Massachusetts	Pennsylvania
Iron (II) Sulfate monohydrate 17375-41-6			X

16. OTHER INFORMATION

<u>NFPA</u>	Health Hazards	Flammability	Instability	Special Hazards
	2	0	0	No data available
<u>HMIS</u>	Health Hazards	Flammability	Physical hazards	Personal Protection
	Not determined	Not determined	Not determined	Not determined

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Revision Note: Regulatory update

Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

End of Safety Data Sheet