SAFETY DATA SHEET

Ferric Sulfate 60%

1. Product and Company Identification

Product Name	Ferric Sulfate
Synonyms Iron	(III Sulfate), Iron Persulfate
MSDS Number	D24740
Product Use	Water and wastewater treatment
Company Identification	Aquachem of America Inc. PO Box 129 Little Chute, WI 54140
Telephone	Aquachem of America Inc. – 920-687-5238 CHEMTREC – 800.424.9300

NFPA diamond and HMIS ratings for this product may be found in section 16 of this Safety Data

2. Hazards Identification

Form	Liquid solution
Color	Reddish brown
Odor	Slight odor
OSHA/HCS Status	Material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).
GHS Classification	Corrosive to metals (Category 1) Acute toxicity, oral (Category 4) Skin corrosion/irritation (Category 2) Serious eye damage (Category 1)
Pictogram	
Signal Word	Danger
Hazard Statement(s)	
H290	May be corrosive to metals.
H302	Harmful if swallowed.
H315	Causes skin irritation.
H318	Causes serious eye damage.
Precautionary Statement(s)	
P234	Keep only in original container.
P264	Wash skin thoroughly after handling.
P270	Do not eat, drink, or smoke when using this product.
P280	Wear protective gloves/ protective clothing/ eye protection/ face protection.
P301 + P312 + P330	IF SWALLOWED: Call a POISON CENTER or doctor/ physician if you feel unwell. Rinse mouth.

P302 + P352	IF ON SKIN: Wash with plenty of soap and water.
P305 + P351 + P338 P+310	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor/ physician.
P332 + P313	If skin irritation occurs: Get medical advice/ attention.
P362 + P364	Take off contaminated clothing and wash it before reuse.
P391	Absorb spillage to prevent material damage.
P501	Dispose of contents/ container to an approved waste disposal plant.

Potential Acute Health Effects

Inhalation	May cause irritation to the respiratory tract.
Ingestion	Harmful is swallowed. Can irritate or burn digestive tract.
Skin	May cause irritation.
Eyes	Can cause severe irritation or burns.

See section 11 for more detailed information on health effects and symptoms

3. Composition/Information on Ingredients

Ingredient Name	CAS Number	WT %
Ferric Sulfate	10028-22-5	60.0
As Iron (FE)		12.0 – 12.5
Sulfuric Acid	7664-93-9	< 0.5

4. First Aid Measures

Eye Contact	Immediately flush eyes with water for 15 minutes. Get medical attention immediately.
Skin Contact	Flush with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Get medical attention if symptoms develop.
Inhalation	If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.
Ingestion	Do not induce vomiting. Drink large amounts of water. Get medical attention immediately.
Protection of First Aid Personnel	No action shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. If it is suspected that dust, vapor, mist, or gas are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus.

5. Fire-fighting Measures

Flammability of the Product	Not flammable
Flash Point (Method)	Not applicable
Auto Ignition	Temperature Not applicable

Extinguishing Media

Suitable: Water spray, foam, carbon dioxide, or dry chemical.
Not Suitable: Not available

Special Fire-fighting Procedures & Hazards	Use water spray or foam in large fires. Wear self-contained breathing apparatus.
Unusual Fire & Explosion Hazards	Dangerous and irritating sulfur dioxide fumes may be present in fire involving this substance.

6. Accidental Release Measures

Personal Precautions	Avoid contact with skin, eyes, and clothing. Avoid breathing vapors or mists.
Environmental Precautions	Prevent run-off onto public land and waterways.
Large Spill	Dike with inert absorbent and mop or pump into clean containers.
Small Spill	Absorb small spills in clay or other inert and neutralize residue with soda ash or sodium bicarbonate.

7. Handling and Storage

Handling	Keep container tightly closed when not in use. Avoid contact with skin, eyes, and clothing. Avoid breathing vapors or mists. Remove contaminated clothing and wash thoroughly after handling.
Storage	Keep storage container tightly closed. Store in a cool, dry, well-ventilated area. Isolate from incompatible substances. Store and ship in plastic or rubber-lined containers.

8. Exposure Controls/Personal Protection

Ingredient Name	ACGIH TLV	OSHA PEL
Ferric Sulfate	Not available	Not available
Sulfuric Acid	0.2 mg/m^3 TWA	1 mg/m^3 TWA

Engineering Measures	Use local exhaust to keep airborne concentrations below the permissible exposure limits.
Hygiene Measures	Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.
Respiratory	Where risk assessment shows air-purifying respirators are appropriate, use a full-face respirator with multi-purpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator.
Eyes and Face	Wear safety glasses with side shields (or goggles) and a face shield.
Skin	Wear appropriate personal protective clothing to prevent skin contact. If prolonged or repeated contact is anticipated, all clothing should be impervious to liquid.

9. Physical and Chemical Properties

Appearance	Reddish brown solution
Odor	Slight odor
pH	0.1 – 1.50
Water Solubility	Very soluble
Vapor Density (air = 1)	Not determined
Evaporation rate (butyl acetate = 1)	Not determined
Boiling Point (°F)	220-235 °F (104-113 °C)
Freezing Point (°F)	-50 °F (-46 °C)
Specific Gravity (H_20 = 1 @ 70 °F)	1.580
Vapor Pressure	Not applicable
Volatile Organic (VOC) Content	Not applicable

10.Stability and Reactivity

Stable: X Unstable: Hazardous Polymerization: Occurs: Does Not Occur: X

Conditions to Avoid	None known
Materials to Avoid	Corrosive to cast iron, bronze, copper and its alloys, galvanized steel
Decomposition Products	When heated to decomposition, toxic sulfur dioxide, sulfur trioxide, and iron oxide fumes are produced.

11.Toxicological Information

Eye	Can cause severe irritation or burns.
Ferric Sulfate	No data available
Sulfuric Acid	No data available
Dermal	May cause irritation or burns.
Ferric Sulfate	LD50 (intraperitoneal, mouse) – 168 mg/kg
Sulfuric Acid	No data available
Inhalation	May cause irritation to the respiratory tract.
Ferric Sulfate	No data available
Sulfuric Acid	LC50 (rat) – 510 mg/m^3 – 2 hr.
Oral	Harmful is swallowed. Can irritate or burn digestive tract.
Ferric Sulfate	No data available
Sulfuric Acid	LD50 (rat) – 2140 mg/kg

Potential Chronic Health Effects

Chronic Effects	Erosion of teeth, mouth inflammation, lesions of the skin, tracheo-bronchitis, conjunctivitis, and gastritis.
Carcinogenicity	IARC and NTP have classified “strong inorganic acid mists containing sulfuric acid” as a known human carcinogen.
Mutagenicity	No data available
Teratogenicity	No data available
Developmental Effects	No data available
Fertility Effects	No data available

12.Ecological Information

Biodegradability	No information available
Ecotoxicity	Toxicity to fish: Ferric Sulfate (LC50 – Gambusia affinis – 37.2 mg/l - 96 h) Sulfuric Acid (LC50 – Brachydanio rerio - > 500 mg/l - 96 h) Toxicity to aquatic invertebrates: Ferric Sulfate (no data available) Sulfuric Acid (EC50 - Water flea - 29 mg/l - 24 h)

13.Disposal Considerations

Waste Disposal	Product should be neutralized with alkalis. Empty containers should be taken for local recycling, recovery, or waste disposal.
RCRA	This material is not listed as a hazardous waste if and when it is discarded. **Note:** If this product is altered, it is the responsibility of the user to determine whether the material meets the criteria for hazardous waste at the time of disposal.

14.Transportation

The data provided in this section is for information only and may not be specific to your package size or mode of transport. You will need to apply the appropriate regulations to properly classify your shipment for transportation.

US DOT 49 CFR 172.101	**Non-bulk Shipments (Drums/Totes)**	**Bulk Shipments (Tank Trucks/Rail cars)**
Proper Shipping Name	Corrosive Liquid, Acidic, Inorganic, N.O.S. (Ferric Sulfate Solution)	Same
Hazard Class	8	Same
Identification Number	UN3264	Same
Packing Group	III	Same
Reportable Quantities	RQ=1000 lbs.	Same
Placards/Labels	Corrosive	Same

15.Regulatory Information

CERCLA / SARA	A spill or release of this material may trigger the emergency release reporting requirements under CERCLA (40 CFR Part 300) and/or SARA Title III (40 CFR Part 355). State or local reporting requirements may differ from federal requirements. Consult counsel for further guidance on your responsibilities under these laws. **Ferric Sulfate – CAS# 10028-22-5 – 1000 lbs. (CERCLA)** **Sulfuric Acid – CAS# 7664-93-9 – 1000 lbs. (CERCLA)**
SARA Title III Section 313	This product is known to contain the following chemicals which are listed in 40 CFR 372.65 as toxic chemicals requiring notification. This information must be included in all SDS's that are copied and distributed for this product. **No component listed**

Clean Water Act (CWA) Section 311	The following chemicals are listed under Section 311 as hazardous substance requiring the submission of a National Pollutant Discharge Elimination System (NPDES) permit application to EPA. **No component listed**
TSCA – Toxic Substances Control Act	All components of this product are listed as “Active” on the Toxic Substances (TSCA) 8(b) Inventory.
RCRA – Resource Conservation and Recovery Act	The requirements of the federal hazardous waste regulations do not apply unless the waste fails to pass any of EPA’s four tests for determining hazardous wastes. Note: If this product is altered, it is the responsibility of the user to determine whether the material meets the criteria for hazardous waste at the time of disposal.

State Regulations

Massachusetts	**RTK Substances:** The following components are listed: Ferric Sulfate, Sulfuric Acid
New Jersey	**RTK Substances:** The following components are listed: Ferric Sulfate, Sulfuric Acid
Pennsylvania	**RTK Substances:** The following components are listed: Ferric Sulfate, Sulfuric Acid
California	**Proposition 65:** WARNING! The State of California has listed “strong inorganic acid mists containing sulfuric acid” as a cancer-causing agent. Sulfuric Acid – CAS# 7664-93-9

16.Other Information

Date of Issue 3/27/2013 | 8/31/2015 | 8/20/2019 -updated TSCA statement, section 15 (RP) | 8/13/2020- updated address, section 1 (ST) | 8/4/2023-accuracy review (ST)

NFPA

HMIS

HEALTH	2
FLAMMABILITY	0
PHYSICAL HAZARD	0
PPE	

Caution: NFPA and HMIS ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. Although these ratings are not required on SDSs under29 CFR 1910.1200, the preparer may choose to provide them.
The customer is responsible for determining the PPE code for this material.

Notice to Reader

The information contained herein is given in good faith, but no warranty, representation, inducement, or license of any kind is made, except that the information is accurate to the best of Aquachem of America Inc. knowledge, or is obtained from sources believed by Aquachem of America Inc. to be reliable and accurate. Aquachem of America Inc. does not assume any legal responsibility for use or reliance upon the information being furnished. Customers are encouraged to conduct their own tests. Before using any product, read the container label directions, as well as, the Safety Data Sheet.