



# MATERIAL SAFETY DATA SHEET

## 1. Product and Company Identification

<b>Material name</b>	<b>FERROUS SULFATE HEPTAHYDRATE</b>
<b>Version #</b>	01
<b>Revision date</b>	09-02-2011
<b>CAS #</b>	7782-63-0
<b>Product Codes</b>	<b>J.T.Baker: 2063, 2070, 2074</b> <b>Macron: 25000, 25002, 5056, 5572</b>
<b>Synonym(s)</b>	Sulfuric acid, iron(2+) salt (1:1), heptahydrate * Iron sulfate heptahydrate
<b>Manufacturer</b>	Avantor Performance Materials, Inc.
<b>Address</b>	3477 Corporate Parkway Suite #200 Center Valley, PA 18034 US
<b>Customer Service</b>	855-282-6867
<b>24 Hour Emergency</b>	908-859-2151
<b>Chemtrec</b>	800-424-9300

## 2. Hazards Identification

<b>Emergency overview</b>	WARNING  Harmful if swallowed. Irritating to eyes, respiratory system and skin. May cause damage to the liver.
<b>OSHA regulatory status</b>	This product is considered hazardous under 29 CFR 1910.1200 (Hazard Communication).
<b>Potential health effects</b>	
<b>Routes of exposure</b>	Inhalation. Skin contact. Eye contact. Ingestion.
<b>Eyes</b>	Causes eye irritation.
<b>Skin</b>	Causes skin irritation. Dust or powder may irritate the skin.
<b>Inhalation</b>	Inhalation of dusts may cause respiratory irritation.
<b>Ingestion</b>	Harmful if swallowed. May irritate and cause stomach pain, vomiting and diarrhoea. Pink urine discoloration is a strong indicator of iron poisoning. Liver damage, coma, and death from iron poisoning has been recorded.
<b>Target organs</b>	Eyes. Skin. Upper respiratory tract. Liver.
<b>Chronic effects</b>	Liver injury may occur.
<b>Potential environmental effects</b>	Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

## 3. Composition / Information on Ingredients

<b>Components</b>	<b>CAS #</b>	<b>Percent</b>
FERROUS SULFATE HEPTAHYDRATE	7782-63-0	99 - 100

**Composition comments** CAS # 7782-63-0 can be described by the CAS # 7720-78-7.

## 4. First Aid Measures

<b>First aid procedures</b>	
<b>Eye contact</b>	Immediately flush with plenty of water for at least 15 minutes. If easy to do, remove contact lenses. Get medical attention if irritation develops or persists.
<b>Skin contact</b>	Immediately flush with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Get medical attention if irritation develops or persists. Wash contaminated clothing before reuse. Destroy or thoroughly clean contaminated shoes.

**Inhalation**

Move to fresh air. Treat symptomatically. Call a physician if symptoms develop or persist.

**Ingestion**

Call a physician or poison control center immediately. Only induce vomiting at the instruction of medical personnel. Never give anything by mouth to an unconscious person.

**Notes to physician**

Treat symptomatically.

**General advice**

Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Show this safety data sheet to the doctor in attendance.

## 5. Fire Fighting Measures

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**Flammable properties**

This product is not flammable.

**Extinguishing media**

**Suitable extinguishing media**

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

**Unsuitable extinguishing media**

None known.

**Protection of firefighters**

**Protective equipment and precautions for firefighters**

Wear full protective clothing, including helmet, self-contained positive pressure or pressure demand breathing apparatus, protective clothing and face mask. Wear self-contained breathing apparatus with a full facepiece operated in the positive pressure demand mode when fighting fires.

**Specific methods**

In the event of fire and/or explosion do not breathe fumes. Use water spray to cool unopened containers.

**Hazardous combustion products**

Sulfur oxides.

## 6. Accidental Release Measures

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**Personal precautions**

Keep unnecessary personnel away. Keep upwind. Ventilate the area. Avoid inhalation of dust from the spilled material. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing.

**Environmental precautions**

Prevent further leakage or spillage if safe to do so. Do not discharge into drains, water courses or onto the ground.

**Methods for containment**

If sweeping of a contaminated area is necessary use a dust suppressant agent which does not react with the product. Prevent entry into waterways, sewer, basements or confined areas.

**Methods for cleaning up**

Avoid dust formation.

Small Spills: Sweep up or vacuum up spillage and collect in suitable container for disposal.

Large Spills: Reduce airborne dust and prevent scattering by moistening with water. Dike far ahead of larger spills for later disposal. Collect dust or particulates using a vacuum cleaner with a HEPA filter.

Never return spills in original containers for re-use. Clean contaminated surface thoroughly. Clean up in accordance with all applicable regulations.

## 7. Handling and Storage

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**Handling**

Keep formation of airborne dusts to a minimum. Wear appropriate personal protective equipment. Avoid breathing dust. Avoid contact with eyes, skin, and clothing. Do not taste or swallow. Do not eat, drink or smoke when using the product. Use only with adequate ventilation. Wash thoroughly after handling. See Section 8 of the MSDS for Personal Protective Equipment.

**Storage**

Keep containers tightly closed in a dry, cool and well-ventilated place.

## 8. Exposure Controls / Personal Protection

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**ACGIH**

**Material**

**Type**

**Value**

FERROUS SULFATE HEPTAHYDRATE (7782-63-0)

TWA

1.0000 mg/m<sup>3</sup>

<b>Engineering controls</b>	Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level.
<b>Personal protective equipment</b>	
<b>Eye / face protection</b>	Use tight fitting goggles if dust is generated.
<b>Skin protection</b>	Wear protective gloves. Wear suitable protective clothing.
<b>Respiratory protection</b>	Wear respirator if there is dust formation.
<b>General hygiene considerations</b>	Provide eyewash station and safety shower. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

## 9. Physical & Chemical Properties

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<b>Appearance</b>	Crystalline.
<b>Color</b>	Blue green.
<b>Odor</b>	Odorless.
<b>Odor threshold</b>	Not available.
<b>Physical state</b>	Solid.
<b>Form</b>	Crystals.
<b>pH</b>	Not available.
<b>Boiling point</b>	> 572 °F (> 300 °C) Decomposes.
<b>Flash point</b>	Not available.
<b>Evaporation rate</b>	Not available.
<b>Flammability limits in air, upper, % by volume</b>	Not available.
<b>Flammability limits in air, lower, % by volume</b>	Not available.
<b>Vapor density</b>	Not available.
<b>Specific gravity</b>	1.9
<b>Relative density</b>	Not available.
<b>Solubility (water)</b>	Soluble
<b>Partition coefficient (n-octanol/water)</b>	Not available
<b>Auto-ignition temperature</b>	Not available.
<b>Molecular weight</b>	278.02 g/mol
<b>Molecular formula</b>	Fe-S-O4.7H2O

## 10. Chemical Stability & Reactivity Information

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<b>Chemical stability</b>	Stable under normal temperature conditions.
<b>Conditions to avoid</b>	Avoid dust formation. Excessive heat.
<b>Incompatible materials</b>	Strong oxidizing agents. Alkalies.
<b>Hazardous decomposition products</b>	Sulfur oxides.
<b>Possibility of hazardous reactions</b>	Hazardous polymerization does not occur.

## 11. Toxicological Information

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### Toxicological data

#### Product

FERROUS SULFATE HEPTAHYDRATE (7782-63-0)

#### Test Results

Acute Oral LD50 Rat: 319 mg/kg

<b>Sensitization</b>	Not a skin sensitizer.
<b>Acute effects</b>	Harmful if swallowed.
<b>Local effects</b>	Irritating to eyes, respiratory system and skin. May cause damage to the liver.
<b>Chronic effects</b>	May cause damage to the liver.
<b>Carcinogenicity</b>	This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA.
<b>Skin corrosion/irritation</b>	Causes skin irritation.
<b>Epidemiology</b>	No epidemiological data is available for this product.
<b>Mutagenicity</b>	No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.
<b>Neurological effects</b>	None known.
<b>Reproductive effects</b>	Contains no ingredient listed as toxic to reproduction
<b>Teratogenicity</b>	No data available to indicate product or any components present at greater than 0.1% may cause birth defects.
<b>Symptoms and target organs</b>	Irritant effects.

## 12. Ecological Information

### Ecotoxicological data

Product	Test Results
FERROUS SULFATE HEPTAHYDRATE (7782-63-0)	EC50 Water flea ( <i>Daphnia magna</i> ): 6.15 mg/l 48.00 hours LC50 Brook trout ( <i>Salvelinus fontinalis</i> ): 0.41 mg/l 96.00 hours

**Ecotoxicity** Very toxic to aquatic life with long lasting effects.

**Persistence and degradability** Not inherently biodegradable.

**Partition coefficient (n-octanol/water)** Not available

## 13. Disposal Considerations

<b>Disposal instructions</b>	Dispose of contents/container in accordance with local/regional/national/international regulations.
<b>Contaminated packaging</b>	Offer rinsed packaging material to local recycling facilities. Since emptied containers retain product residue, follow label warnings even after container is emptied.

## 14. Transport Information

### DOT

Not regulated as dangerous goods.

### IATA

Not regulated as dangerous goods.

### IMDG

Not regulated as dangerous goods.

## 15. Regulatory Information

**US federal regulations** This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

This product is not listed on the U.S. EPA TSCA Inventory. Under TSCA, hydrates are considered mixtures of their anhydrous salt and water. Accordingly, the anhydrous form is subject to TSCA reporting requirements.

### CERCLA (Superfund) reportable quantity

FERROUS SULFATE HEPTAHYDRATE: 1000.0000

## Superfund Amendments and Reauthorization Act of 1986 (SARA)

**Hazard categories**  
Immediate Hazard - Yes  
Delayed Hazard - Yes  
Fire Hazard - No  
Pressure Hazard - No  
Reactivity Hazard - No

**Section 311 hazardous chemical**  
Yes

**Clean Water Act (CWA)**  
Hazardous substance

**Food and Drug Administration (FDA)**  
Total food additive  
Direct food additive  
GRAS food additive

### Inventory status

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	Yes
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	Yes
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	No
Korea	Existing Chemicals List (ECL)	No
New Zealand	New Zealand Inventory	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	No

\*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)

**State regulations**  
This product does not contain a chemical known to the State of California to cause cancer, birth defects or other reproductive harm.

### US - Pennsylvania RTK - Hazardous Substances: Listed substance

FERROUS SULFATE HEPTAHYDRATE (CAS 7782-63-0) Listed.

**Saf-T-Data**  
Health: 3 - Severe (Life)  
Flammability: 0 - None  
Reactivity: 1 - Slight  
Contact: 2 - Moderate  
Lab Protective Equip: B - GOGGLES; LAB COAT; VENT HOOD; PROPER GLOVES  
Storage Color Code: G - Green (General Storage)

## 16. Labeling Info

<b>Label Hazard Warning</b>	WARNING  Harmful if swallowed. Irritating to eyes, respiratory system and skin. May cause damage to the liver.
<b>Label Precautions</b>	Avoid breathing dust/fume/gas/mist/vapors/spray. Avoid contact with eyes, skin, and clothing. Do not taste or swallow. Use only with adequate ventilation. Wash thoroughly after handling. Keep container closed.
<b>Label First Aid</b>	Immediately flush eyes with plenty of water for at least 15 minutes. Flush skin thoroughly with water. If gas/fume/vapor/dust/mist from the material is inhaled, remove the affected person immediately to fresh air. Get medical attention if irritation develops or persists. IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician. Do not induce vomiting without advice from poison control center.

## 17. Other Information

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**NFPA ratings**

Health: 2  
Flammability: 0  
Instability: 0

**Disclaimer**

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**Issue date**

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