

# SAFETY DATA SHEET

## 1. Identification

**Product identifier:** FERROUS SULFATE HEPTAHYDRATE

**Other means of identification**

**Product No.:** 2074, 2070, 2063, 5572, 5056

**Recommended use and restriction on use**

**Recommended use:** Not available.

**Restrictions on use:** Not known.

**Manufacturer/Importer/Supplier/Distributor information**

**Manufacturer**

**Company Name:** Avantor Performance Materials, Inc.  
**Address:** 3477 Corporate Parkway, Suite 200  
Center Valley, PA 18034

**Telephone:** Customer Service: 855-282-6867

**Fax:**  
**Contact Person:** Environmental Health & Safety  
**e-mail:** info@avantormaterials.com

**Emergency telephone number:**

24 Hour Emergency: 908-859-2151

Chemtrec: 800-424-9300

## 2. Hazard(s) identification

**Hazard classification**

**Health hazards**

Acute toxicity (Oral)	Category 4
Skin corrosion/irritation	Category 2
Serious eye damage/eye irritation	Category 2A
Specific target organ toxicity - single exposure (Oral)	Category 2
Specific target organ toxicity - single exposure	Category 3

**Environmental hazards**

Acute hazards to the aquatic environment	Category 1
Chronic hazards to the aquatic environment	Category 1

**Label elements**

**Hazard symbol:**



**Signal word:** Warning

**Hazard statement:** Harmful if swallowed.  
Causes skin irritation.  
Causes serious eye irritation.  
May cause respiratory irritation.  
May cause damage to organs if swallowed.  
Very toxic to aquatic life with long lasting effects.

**Precautionary statement**

**Prevention:** Wear protective gloves/protective clothing/eye protection/face protection. Do not eat, drink or smoke when using this product. Do not breathe dust. Use only outdoors or in a well-ventilated area. Wash thoroughly after handling. Avoid release to the environment.

**Response:** IF exposed or if you feel unwell: Call a POISON CENTER or doctor/physician. IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell. Rinse mouth. IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or doctor/physician if you feel unwell. 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. Take off contaminated clothing and wash before reuse. IF ON SKIN: Wash with plenty of soap and water. If skin irritation occurs: Get medical advice/attention. Collect spillage.

**Storage:** Store locked up. Store in a well-ventilated place. Keep container tightly closed.

**Disposal:** Dispose of contents/container to an appropriate treatment and disposal facility in accordance with applicable laws and regulations, and product characteristics at time of disposal.

**Other hazards which do not result in GHS classification:** None.

**3. Composition/information on ingredients**

**Substances**

Chemical identity	Common name and synonyms	CAS number	Content in percent (%)*
SULFURIC ACID, IRON(2) SALT (1:1), HEPTAHYDRATE		7782-63-0	99 - 100%

\* All concentrations are percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

**4. First-aid measures**

**General information:** Get medical advice/attention if you feel unwell. Show this safety data sheet to the doctor in attendance.

**Ingestion:** Rinse mouth. Call a POISON CENTER or doctor/physician if you feel unwell.

**Inhalation:** Move to fresh air. Get medical attention if symptoms persist.

**Skin contact:** Wash skin thoroughly with soap and water. Get medical attention if irritation persists after washing. Wash contaminated clothing before reuse. Destroy or thoroughly clean contaminated shoes.

**Eye contact:** Immediately flush with plenty of water for at least 15 minutes. If easy to do, remove contact lenses. Get medical attention if symptoms persist.

**Most important symptoms/effects, acute and delayed**

**Symptoms:** Irritating to eyes, respiratory system and skin. Harmful if swallowed.

**Indication of immediate medical attention and special treatment needed**

**Treatment:** Symptoms may be delayed. Treat symptomatically.

**5. Fire-fighting measures**

**General fire hazards:** No unusual fire or explosion hazards noted.

**Suitable (and unsuitable) extinguishing media**

**Suitable extinguishing media:** Use fire-extinguishing media appropriate for surrounding materials.

**Unsuitable extinguishing media:** None known.

**Specific hazards arising from the chemical:** During fire, gases hazardous to health may be formed.

**Special protective equipment and precautions for firefighters**

**Special fire fighting procedures:** Move containers from fire area if you can do so without risk. Use water spray to keep fire-exposed containers cool. Cool containers exposed to flames with water until well after the fire is out.

**Special protective equipment for fire-fighters:** Firefighters must use standard protective equipment including flame retardant coat, helmet with face shield, gloves, rubber boots, and in enclosed spaces, SCBA.

**6. Accidental release measures**

**Personal precautions, protective equipment and emergency procedures:** Keep unauthorized personnel away. Keep upwind. Ventilate closed spaces before entering them. Avoid inhalation of dust. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Use personal protective equipment. See Section 8 of the MSDS for Personal Protective Equipment.

**Methods and material for containment and cleaning up:** Sweep up and place in a clearly labeled container for chemical waste. Clean surface thoroughly to remove residual contamination.

**Notification Procedures:** Inform authorities if large amounts are involved.

**Environmental precautions:** Do not contaminate water sources or sewer. Prevent further leakage or spillage if safe to do so. Avoid release to the environment.

## 7. Handling and storage

**Precautions for safe handling:** Minimize dust generation and accumulation. Wear appropriate personal protective equipment. Avoid inhalation of 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 hands thoroughly after handling. See Section 8 of the MSDS for Personal Protective Equipment.

**Conditions for safe storage, including any incompatibilities:** Keep container tightly closed. Store in a well-ventilated place. Store in a dry place. Store locked up.

## 8. Exposure controls/personal protection

### Control parameters

#### Occupational exposure limits

Chemical identity	Type	Exposure Limit values	Source
SULFURIC ACID, IRON(2) SALT (1:1), HEPTAHYDRATE - as Fe	TWA	1 mg/m <sup>3</sup>	US. ACGIH Threshold Limit Values (2011)
	REL	1 mg/m <sup>3</sup>	US. NIOSH: Pocket Guide to Chemical Hazards (2010)
	TWA	1 mg/m <sup>3</sup>	US. OSHA Table Z-1-A (29 CFR 1910.1000) (1989)

**Appropriate engineering controls** No data available.

### Individual protection measures, such as personal protective equipment

**General information:** 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. An eye wash and safety shower must be available in the immediate work area.

**Eye/face protection:** Wear safety glasses with side shields (or goggles).

#### Skin protection

**Hand protection:** Chemical resistant gloves

**Other:** Wear suitable protective clothing.

**Respiratory protection:** In case of inadequate ventilation use suitable respirator. Air-purifying respirator with a high efficiency particulate filter.

**Hygiene measures:** 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 to remove contaminants. Discard contaminated footwear that cannot be cleaned.

## 9. Physical and chemical properties

### Appearance

**Physical state:** Solid  
**Form:** Crystals  
**Color:** Blue-green

<b>Odor:</b>	Odorless
<b>Odor threshold:</b>	No data available.
<b>pH:</b>	No data available.
<b>Melting point/freezing point:</b>	64 °C
<b>Initial boiling point and boiling range:</b>	> 300 °C
<b>Flash Point:</b>	Not applicable
<b>Evaporation rate:</b>	No data available.
<b>Flammability (solid, gas):</b>	No data available.
<b>Upper/lower limit on flammability or explosive limits</b>	
<b>Flammability limit - upper (%):</b>	No data available.
<b>Flammability limit - lower (%):</b>	No data available.
<b>Explosive limit - upper (%):</b>	No data available.
<b>Explosive limit - lower (%):</b>	No data available.
<b>Vapor pressure:</b>	No data available.
<b>Vapor density:</b>	No data available.
<b>Relative density:</b>	1.9 (20 °C)
<b>Solubility(ies)</b>	
<b>Solubility in water:</b>	Soluble
<b>Solubility (other):</b>	No data available.
<b>Partition coefficient (n-octanol/water):</b>	No data available.
<b>Auto-ignition temperature:</b>	No data available.
<b>Decomposition temperature:</b>	No data available.
<b>Viscosity:</b>	No data available.
<b>Other information</b>	
<b>Molecular weight:</b>	278.02 g/mol (Fe.H2O4S.7H2O)

## 10. Stability and reactivity

<b>Reactivity:</b>	No dangerous reaction known under conditions of normal use.
<b>Chemical stability:</b>	Material is stable under normal conditions.
<b>Possibility of hazardous reactions:</b>	Hazardous polymerization does not occur.
<b>Conditions to avoid:</b>	Excessive heat. Avoid conditions which create dust.
<b>Incompatible materials:</b>	Strong oxidizing agents. Alkalies.
<b>Hazardous decomposition products:</b>	Oxides of sulfur.

## 11. Toxicological information

### Information on likely routes of exposure

<b>Ingestion:</b>	Harmful if swallowed.
<b>Inhalation:</b>	May cause irritation to the respiratory system.
<b>Skin contact:</b>	Causes skin irritation.
<b>Eye contact:</b>	Causes serious eye irritation.

## Information on toxicological effects

### Acute toxicity (list all possible routes of exposure)

#### Oral

**Product:** LD 50 (Rat): 319 mg/kg

#### Dermal

**Product:** No data available.

#### Inhalation

**Product:** No data available.

#### Repeated dose toxicity

**Product:** No data available.

#### Skin corrosion/irritation

**Product:** Causes skin irritation.

#### Serious eye damage/eye irritation

**Product:** Causes serious eye irritation.

#### Respiratory or skin sensitization

**Product:** Not a skin sensitizer.

#### Carcinogenicity

**Product:** This substance has no evidence of carcinogenic properties.

#### IARC Monographs on the Evaluation of Carcinogenic Risks to Humans:

No carcinogenic components identified

#### US. National Toxicology Program (NTP) Report on Carcinogens:

No carcinogenic components identified

#### US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050):

No carcinogenic components identified

#### Germ cell mutagenicity

##### In vitro

**Product:** No mutagenic components identified

##### In vivo

**Product:** No mutagenic components identified

#### Reproductive toxicity

**Product:** No components toxic to reproduction

#### Specific target organ toxicity - single exposure

**Product:** Respiratory tract irritation. Liver.

#### Specific target organ toxicity - repeated exposure

**Product:** None known.

#### Aspiration hazard

**Product:** Not classified

#### Other effects:

None known.

## 12. Ecological information

### Ecotoxicity:

#### Acute hazards to the aquatic environment:

##### Fish

**Product:** LC 50 (Brook trout (*Salvelinus fontinalis*), 96 h): 0.41 mg/l

##### Aquatic invertebrates

**Product:** EC 50 (Water flea (*Daphnia magna*), 48 h): 6.15 mg/l

#### Chronic hazards to the aquatic environment:

##### Fish

**Product:** No data available.

##### Aquatic invertebrates

**Product:** No data available.

##### Toxicity to Aquatic Plants

**Product:** No data available.

### Persistence and degradability

#### Biodegradation

**Product:** Not inherently biodegradable.

#### BOD/COD ratio

**Product:** No data available.

### Bioaccumulative potential

#### Bioconcentration factor (BCF)

**Product:** No data available on bioaccumulation.

#### Partition coefficient n-octanol / water (log Kow)

**Product:** No data available.

**Mobility in soil:** The product is water soluble and may spread in water systems.

**Other adverse effects:** Very toxic to aquatic life with long lasting effects.

## 13. Disposal considerations

**Disposal instructions:** Discharge, treatment, or disposal may be subject to national, state, or local laws. Do not allow to enter drains, sewers or watercourses.

**Contaminated packaging:** Since emptied containers retain product residue, follow label warnings even after container is emptied.

## 14. Transport information

### DOT

Not regulated.

### IMDG

Not regulated.

### IATA

Not regulated.

## 15. Regulatory information

### US federal regulations

#### TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

##### US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

None present or none present in regulated quantities.

#### CERCLA Hazardous Substance List (40 CFR 302.4):

SULFURIC ACID, IRON(2) Reportable quantity: 1000 lbs.  
SALT (1:1), HEPTAHYDRATE

#### Superfund amendments and reauthorization act of 1986 (SARA)

##### Hazard categories

Acute (Immediate)  Chronic (Delayed)  Fire  Reactive  Pressure Generating

#### SARA 302 Extremely hazardous substance

None present or none present in regulated quantities.

#### SARA 304 Emergency release notification

Chemical identity	RQ
SULFURIC ACID, IRON(2)	1000 lbs.
SALT (1:1), HEPTAHYDRATE	

#### SARA 311/312 Hazardous chemical

Chemical identity	Threshold Planning Quantity
SULFURIC ACID, IRON(2)	500 lbs
SALT (1:1), HEPTAHYDRATE	

#### SARA 313 (TRI reporting)

None present or none present in regulated quantities.

#### Clean Water Act Section 311 Hazardous Substances (40 CFR 117.3)

SULFURIC ACID, IRON(2) Reportable quantity: 1000 lbs.  
SALT (1:1), HEPTAHYDRATE

#### Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130):

None present or none present in regulated quantities.

### US state regulations

#### US. California Proposition 65

No ingredient regulated by CA Prop 65 present.

#### US. New Jersey Worker and Community Right-to-Know Act

SULFURIC ACID, IRON(2) Listed  
SALT (1:1), HEPTAHYDRATE

#### US. Massachusetts RTK - Substance List

SULFURIC ACID, IRON(2) Listed  
SALT (1:1),  
HEPTAHYDRATE

#### US. Pennsylvania RTK - Hazardous Substances

SULFURIC ACID, IRON(2) Listed  
SALT (1:1),  
HEPTAHYDRATE



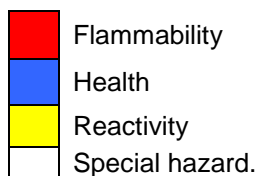
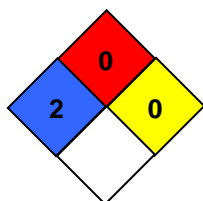
**US. Rhode Island RTK**  
SULFURIC ACID, IRON(2) Listed  
SALT (1:1),  
HEPTAHYDRATE

**Inventory Status:**

Canada DSL Inventory List:	On or in compliance with the inventory
EU EINECS List:	On or in compliance with the inventory
US TSCA Inventory:	On or in compliance with the inventory
Australia AICS:	On or in compliance with the inventory
EINECS, ELINCS or NLP:	On or in compliance with the inventory
Japan (ENCS) List:	Not in compliance with the inventory.
China Inv. Existing Chemical Substances:	On or in compliance with the inventory
Korea Existing Chemicals Inv. (KECI):	On or in compliance with the inventory
Canada NDSL Inventory:	Not in compliance with the inventory.
Philippines PICCS:	On or in compliance with the inventory
New Zealand Inventory of Chemicals:	On or in compliance with the inventory
Japan ISHL Listing:	Not in compliance with the inventory.
Japan Pharmacopoeia Listing:	Not in compliance with the inventory.

**16. Other information, including date of preparation or last revision**

**NFPA Hazard ID**



Hazard rating: 0 - Minimal; 1 - Slight; 2 - Moderate; 3 - Serious; 4 - Severe

<b>Issue date:</b>	07-03-2014
<b>Revision date:</b>	No data available.
<b>Version #:</b>	1.0
<b>Further information:</b>	No data available.

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