

Safety Data Sheet

according to 29CFR1910/1200 and GHS Rev. 3

Effective date : 01.07.2015

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Ferrous Sulfate, 1M

SECTION 1 : Identification of the substance/mixture and of the supplier

Product name : Ferrous Sulfate, 1M

Manufacturer/Supplier Trade name:

Manufacturer/Supplier Article number: S25326

Recommended uses of the product and uses restrictions on use:

Manufacturer Details:

AquaPhoenix Scientific
9 Barnhart Drive, Hanover, PA 17331

Supplier Details:

Fisher Science Education
15 Jet View Drive, Rochester, NY 14624

Emergency telephone number:

Fisher Science Education Emergency Telephone No.: 800-535-5053

SECTION 2 : Hazards identification

Classification of the substance or mixture:



Irritant

Acute toxicity (oral, dermal, inhalation), category 4
Skin irritation, category 2
Eye irritation, category 2A

Acute Tox. 4
Skin Irrit. 2
Eye Irrit. 2A
Corr. Metals

Signal word :Warning

Hazard statements:

May be corrosive to metals
Harmful if swallowed
Causes skin irritation
Causes serious eye irritation

Precautionary statements:

If medical advice is needed, have product container or label at hand
Keep out of reach of children
Read label before use
Wash ... thoroughly after handling
Do not eat, drink or smoke when using this product
Wear protective gloves/protective clothing/eye protection/face protection
Do not eat, drink or smoke when using this product
IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell
Rinse mouth
IF ON SKIN: Wash with soap and water
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do.
Continue rinsing

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If skin irritation occurs: Get medical advice/attention
If eye irritation persists get medical advice/attention
Take off contaminated clothing and wash before reuse
Dispose of contents/container to ...

Other Non-GHS Classification:

WHMIS



NFPA/HMIS



NFPA SCALE (0-4)

Health	2
Flammability	0
Physical Hazard	0
Personal Protection	X

HMIS RATINGS (0-4)

SECTION 3 : Composition/information on ingredients

Ingredients:		
CAS 7782-63-0	Ferrous sulfate heptahydrate	<22 %
CAS 7664-93-9	Sulfuric Acid	<1 %
CAS 7732-18-5	Deionized Water	<77 %

Percentages are by weight

SECTION 4 : First aid measures

Description of first aid measures

After inhalation: Move exposed individual to fresh air. Loosen clothing as necessary and position individual in a comfortable position. If breathing difficult, give oxygen. Get medical attention.

After skin contact: Get medical aid. Flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse. Wash affected area with soap and water. Rinse/flush exposed skin gently using water for 15-20 minutes. Get medical attention.

After eye contact: Protect unexposed eye. Rinse/flush exposed eye(s) gently using water for 15-20 minutes. Remove contact lens(es) if able to do so during rinsing. Seek immediate medical attention or advice.

After swallowing: Rinse mouth thoroughly. Do not induce vomiting. Have exposed individual drink sips of water. Get medical attention.

Most important symptoms and effects, both acute and delayed:

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Irritation, Nausea, Headache, Shortness of breath.;

Indication of any immediate medical attention and special treatment needed:

If seeking medical attention, provide SDS document to physician. Physician should treat symptomatically.

SECTION 5 : Firefighting measures

Extinguishing media

Suitable extinguishing agents: Use water spray, dry chemical, carbon dioxide, or chemical foam.

For safety reasons unsuitable extinguishing agents:

Special hazards arising from the substance or mixture:

Thermal decomposition can lead to release of irritating gases and vapors. Contact with most metals generates flammable and explosive hydrogen gas .

Advice for firefighters:

Protective equipment: Wear protective eyewear, gloves, and clothing. Refer to Section 8.

Additional information (precautions): Avoid inhaling gases, fumes, dust, mist, vapor, and aerosols. Avoid contact with skin, eyes, and clothing.

SECTION 6 : Accidental release measures

Personal precautions, protective equipment and emergency procedures:

Use spark-proof tools and explosion-proof equipment. Ensure adequate ventilation. Ensure that air-handling systems are operational.

Environmental precautions:

Should not be released into the environment.

Methods and material for containment and cleaning up:

Cover the spill with Sodium Carbonate or a soda ash - slaked lime mixture . Absorb with suitable material and containerize for disposal . Wear protective eyewear, gloves, and clothing. Refer to Section 8. Always obey local regulations. If necessary use trained response staff or contractor. Evacuate personnel to safe areas.

Containerize for disposal. Refer to Section 13. Keep in suitable closed containers for disposal.

Reference to other sections:

SECTION 7 : Handling and storage

Precautions for safe handling:

Avoid contact with skin, eyes, and clothing. Follow good hygiene procedures when handling chemical materials. Refer to Section 8. Follow proper disposal methods. Refer to Section 13. Do not eat, drink, smoke, or use personal products when handling chemical substances.

Conditions for safe storage, including any incompatibilities:

Store away from incompatible materials. Avoid storage near extreme heat, ignition sources or open flame.

Store in a cool location. Keep away from food and beverages. Protect from freezing and physical damage. Provide ventilation for containers. Keep container tightly sealed.

SECTION 8 : Exposure controls/personal protection



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Control Parameters:	7782-63-0, Ferrous sulfate heptahydrate, TWA 1 mg/m ³ USA. ACGIH 7782-63-0, Ferrous sulfate heptahydrate, TWA 1 mg/m ³ USA. OSHA 7782-63-0, Ferrous sulfate heptahydrate, TWA 1 mg/m ³ USA. NIOSH 7664-93-9, Sulfuric acid, TWA 0.2 mg/m ³ USA. ACGIH 7664-93-9, Sulfuric acid, TWA 1 mg/m ³ USA. OSHA 7664-93-9, Sulfuric acid, TWA 1 mg/m ³ USA. OSHA
Appropriate Engineering controls:	Emergency eye wash fountains and safety showers should be available in the immediate vicinity of use/handling. Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapor and mists below the applicable workplace exposure limits (Occupational Exposure Limits-OELs) indicated above.
Respiratory protection:	Not required under normal conditions of use. Where risk assessment shows air-purifying respirators are appropriate use a full-face particle respirator type N100 (US) or type P3 (EN 143) respirator cartridges as a backup to engineering controls. When necessary use NIOSH approved breathing equipment.
Protection of skin:	Select glove material impermeable and resistant to the substance. Select glove material based on rates of diffusion and degradation. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Use proper glove removal technique without touching outer surface. Avoid skin contact with used gloves. Wear protective clothing.
Eye protection:	Safety glasses with side shields or goggles. Wear equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).
General hygienic measures:	Perform routine housekeeping. Wash hands before breaks and immediately after handling the product. Avoid contact with skin, eyes, and clothing. Before rewearing wash contaminated clothing.

SECTION 9 : Physical and chemical properties

Appearance (physical state,color):	Clear colorless liquid to light green	Explosion limit lower:	Not Determined
		Explosion limit upper:	Not Determined
Odor:	Odorless	Vapor pressure:	Not Determined
Odor threshold:	Not Determined	Vapor density:	Not Determined
pH-value:	< 3	Relative density:	Not Determined
Melting/Freezing point:	Approximately 0°C	Solubilities:	
Boiling point/Boiling range:	Approximately 100°C	Partition coefficient (n-octanol/water):	Not Determined
Flash point (closed cup):	Not Determined	Auto/Self-ignition temperature:	Not Determined
Evaporation rate:	Not Determined	Decomposition temperature:	Not Determined
Flammability (solid,gaseous):	Not Determined	Viscosity:	a. Kinematic: Not Determined b. Dynamic: Not Determined
Density: Not Determined			
Ferrous Sulfate: Molecular Weight: 278.01			

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SECTION 10 : Stability and reactivity

Reactivity: Nonreactive under normal conditions.

Chemical stability: Stable under normal conditions.

Possible hazardous reactions: None under normal processing.

Conditions to avoid: Incompatible materials. Excess heat.

Incompatible materials: Strong bases, strong oxidizing agents, organics, chlorates, carbides, reducing agents, nitrates, fulminates. Contact with water will generate heat.

Hazardous decomposition products: Sulphur oxides, Iron oxides

SECTION 11 : Toxicological information

Acute Toxicity:		
Oral:	7782-63-0	LD50 Oral - Mouse - 1,520 mg/kg
Oral:	7664-93-9	LD50 Oral - Rat - 2,140 mg/kg
Inhalation:	7664-93-9	LC50 Inhalation - Rat - 2 h - 510 mg/m ³
Chronic Toxicity: No additional information.		
Corrosion Irritation:		
Dermal:	7664-93-9	Skin - Rabbit Result : Extremely corrosive and destructive to tissue
Ocular:	7664-93-9	Eyes - Rabbit Result : Corrosive to eyes
Sensitization:		No additional information.
Single Target Organ (STOT):		No additional information.
Numerical Measures:		No additional information.
Carcinogenicity:		No additional information.
Mutagenicity:		No additional information.
Reproductive Toxicity:		No additional information.

SECTION 12 : Ecological information

Ecotoxicity

7664-93-9: LC50 - Gambusia affinis (Mosquito fish) - 42 mg/l - 96 h

7664-93-9: EC50 - Daphnia magna (Water flea) - 29 mg/l - 24 h

Persistence and degradability: Readily degradable in the environment.

Bioaccumulative potential:

Mobility in soil:

Other adverse effects:

SECTION 13 : Disposal considerations

Waste disposal recommendations:

Cover with Sodium Carbonate or a soda ash - slaked lime mixture. Add water to form slurry. Flush to sewer with large quantities of water. Treat solid residue as normal refuse, unless prohibited due to iron content in the

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substance. Dispose of empty containers as unused product. Product or containers must not be disposed together with household garbage. It is the responsibility of the waste generator to properly characterize all waste materials according to applicable regulatory entities (US 40CFR262.11). Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. Chemical waste generators must also consult local, regional, and national hazardous waste regulations. Ensure complete and accurate classification.

SECTION 14 : Transport information

UN-Number

Not Regulated

UN proper shipping name

Not Regulated

Transport hazard class(es)

Packing group: Not Regulated

Environmental hazard:

Transport in bulk:

Special precautions for user:

SECTION 15 : Regulatory information

United States (USA)

SARA Section 311/312 (Specific toxic chemical listings):

Acute

SARA Section 313 (Specific toxic chemical listings):

7782-63-0 Ferrous Sulfate

RCRA (hazardous waste code):

None of the ingredients is listed

TSCA (Toxic Substances Control Act):

All ingredients are listed.

CERCLA (Comprehensive Environmental Response, Compensation, and Liability Act):

7782-63-0 Ferrous sulfate heptahydrate 1000 lb

7664-93-9 Sulfuric Acid 1000 lb

Proposition 65 (California):

Chemicals known to cause cancer:

None of the ingredients is listed

Chemicals known to cause reproductive toxicity for females:

None of the ingredients is listed

Chemicals known to cause reproductive toxicity for males:

None of the ingredients is listed

Chemicals known to cause developmental toxicity:

None of the ingredients is listed

Canada

Canadian Domestic Substances List (DSL):

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7782-63-0 Not listed.

Canadian NPRI Ingredient Disclosure list (limit 0.1%):

None of the ingredients is listed

Canadian NPRI Ingredient Disclosure list (limit 1%):

None of the ingredients is listed

SECTION 16 : Other information

This product has been classified in accordance with hazard criteria of the Controlled Products Regulations and the SDS contains all the information required by the Controlled Products Regulations. Note: The responsibility to provide a safe workplace remains with the user. The user should consider the health hazards and safety information contained herein as a guide and should take those precautions required in an individual operation to instruct employees and develop work practice procedures for a safe work environment. The information contained herein is, to the best of our knowledge and belief, accurate. However, since the conditions of handling and use are beyond our control, we make no guarantee of results, and assume no liability for damages incurred by the use of this material. It is the responsibility of the user to comply with all applicable laws and regulations applicable to this material.

GHS Full Text Phrases:

Abbreviations and acronyms:

IMDG: International Maritime Code for Dangerous Goods

PNEC: Predicted No-Effect Concentration (REACH)

CFR: Code of Federal Regulations (USA)

SARA: Superfund Amendments and Reauthorization Act (USA)

RCRA: Resource Conservation and Recovery Act (USA)

TSCA: Toxic Substances Control Act (USA)

NPRI: National Pollutant Release Inventory (Canada)

DOT: US Department of Transportation

IATA: International Air Transport Association

GHS: Globally Harmonized System of Classification and Labelling of Chemicals

ACGIH: American Conference of Governmental Industrial Hygienists

CAS: Chemical Abstracts Service (division of the American Chemical Society)

NFPA: National Fire Protection Association (USA)

HMIS: Hazardous Materials Identification System (USA)

WHMIS: Workplace Hazardous Materials Information System (Canada)

DNEL: Derived No-Effect Level (REACH)

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