

MATERIAL SAFETY DATA SHEET (MSDS)

FERROUS SULFATE MONOHYDRATE

SECTION 1 - Chemical Product and Company Identification

Material Name: Ferrous Sulphate Monohydrate

Supplier: NUMINOR CHEMICAL INDUSTRIES LTD.

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SECTION 2 - Hazards Identification

WARNING!

Harmful if swallowed or inhaled. Causes irritation to skin, eyes and respiratory tract. Affects the liver.

Potential Health Effects

Eye Contact: Causes irritation, redness, and pain.

Skin Contact: Causes irritation to skin. Symptoms include redness, itching, and pain.

Ingestion: Low toxicity in small quantities but larger dosages may cause nausea, vomiting, diarrhea, and black stool. Pink urine discoloration is a strong indicator of iron poisoning. Liver damage, coma, and death from iron poisoning has been recorded. Smaller doses are much more toxic to children.

Inhalation: Causes irritation to the respiratory tract. Symptoms may include coughing, shortness of breath.

Chronic Exposure: Severe or chronic ferrous sulfate poisonings may damage blood vessels. Large chronic doses cause rickets in infants. Chronic exposure may cause liver effects. Prolonged exposure of the eyes may cause discoloration.

R-Phrases: R22- Harmful if Swallowed

R36/37/38- Irritating to eyes, respiratory system and skin.

SECTION 3 - Composition, Information on Ingredients

Chemical Name: Ferrous Sulfate Monohydrate

Formula: FeSO₄ · H₂O

Synonyms: Ferrous Sulphate, Iron Sulphate

CAS No.: 17375-41-6

% (by weight): app. 90-100%



SECTION 4 - First Aid Measures

First aid

- **Skin contact:** Rinse immediately with plenty of soap and water. Remove contaminated clothing and seek medical attention if irritation develops.
- **Inhalation:** Remove victim from exposure to fresh air.
If feeling unwell, immediately seek medical attention.
- **Eye contact:** Rinse immediately with clean water for at least 15 minutes occasionally lifting the upper and lower eyelids. Seek medical attention.
- **Ingestion:** If victim is conscious and alert, give 2-4 cupfuls of milk or water. Never give anything by mouth to an unconscious person. Get medical aid immediately.

Protection of rescue personnel:

Avoid all unnecessary exposure. Use appropriate protection.
(see Section 9).

SECTION 5 - Firefighting Measures

General Information: As in any fire, wear a self-contained breathing apparatus in pressure-demand, and full protective gear. During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion. Substance is noncombustible. This material in sufficient quantity and reduced particle size is capable of creating a dust explosion.

Extinguishing Media: Use protective clothing and breathing equipment appropriate for the surrounding fire. Use any means suitable for extinguishing surrounding fire.

Autoignition Temperature: Not applicable.

Flash Point: Not applicable.

Explosion Limits, lower: Not available.

Explosion Limits, upper: Not available.

SECTION 6 - Accidental Release Measures

Personal precautions: Wear suitable gloves and eye/face protection as indicated in Section 8.
Avoid dust creation.

Environmental precautions: Do not let product enter drains, sewage system, ground water.

Methods for cleaning up: Vacuum or sweep up material and place into a suitable disposal container. Clean up spills immediately, observing precautions in the Protective Equipment section. Avoid generating dusty conditions. Provide ventilation. Place under an inert atmosphere.

SECTION 7 - Handling and Storage

- Handling:** Wash thoroughly after handling. Remove contaminated clothing and wash before reuse. Use only in a well-ventilated area. Minimize dust generation and accumulation. Avoid contact with eyes, skin, and clothing. Keep container tightly closed. Avoid ingestion and inhalation. Do not ingest or inhale. Handle under an inert atmosphere. Store protected from air.
- Storage:** Store in a tightly closed container. Store in a cool, dry, well-ventilated area. Do not use this product if coated with brownish-yellow basic ferric sulfate. Isolate from incompatible substances.

SECTION 8 - Exposure Controls and Personal Protection

- **Respiratory protection:** A respiratory protection program that meets European Standard EN 149 must be followed whenever workplace conditions warrant a respirator's use. Follow the respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Always use a NIOSH or European Standard EN 149 approved respirator when necessary.
- **Hand protection:** Appropriate gloves to prevent skin exposure.
- **Skin protection:** Appropriate work clothes to prevent skin exposure..
- **Eye protection:** Chemical goggles or safety glasses.

SECTION 9 - Physical and Chemical Properties

- Physical State:** Solid Powder
- Melting Point:** 57C (135F) Loses water
- Boiling Point:** > 300C (> 572F) Decomposes.
- Density:** app. 1.5 g/cm³
- Solubility in water:** 48.6 g/100 g water @ 50C
- Appearance & Odour:** Slight grey to off-white powder or granular

SECTION 10 - Stability and Reactivity

- Chemical Stability:** Stable under ordinary conditions of use and storage. Loses water in dry air and oxidizes upon exposure to moisture, forming a brown coating of extremely corrosive basic ferric sulfate.
- Conditions to Avoid:** Moisture.
- Incompatibilities with Other Materials:** Alkalis, soluble carbonates, and oxidizing materials.
Reacts in moist air to form ferric sulfate.
- Hazardous Decomposition Products:** Burning may produce sulfur oxides.
- Hazardous Polymerization:** Has not been reported

SECTION 11 - Toxicological Information

LD50/LC50:	No information available.
Epidemiology:	No information available.
Teratogenicity:	No information available.
Reproductive Effects:	No information available.
Neurotoxicity:	No information available.
Mutagenicity:	No information available.
Other Studies:	No information available.

SECTION 12 - Ecological Information

This product is highly water soluble and is directly acidic which can result in toxic impacts. As well, in aquatic and terrestrial environments, its ferrous iron content will oxidize, consuming oxygen and the resultant hydrolysis reactions will generate additional acidity. These will also produce ferric hydroxide precipitates that can detrimentally affect aquatic organisms.

SECTION 13 - Disposal Considerations

Disposal:	Comply with local regulations for disposal.
Waste of residues:	This material and its container must be disposed of as hazardous waste. Because of possible pollution, remove as industrial waste or hazardous waste. Avoid release to the environment. Refer to special instructions/safety data sheets.
Contaminated packaging:	Keep waste packaging separate.

SECTION 14 - Transport Information

Hazard Labels:



UN - No:	UN 3077
ADR/IMO-IMDG:	9
Shipping Name:	Environmentally Hazardous Substance, Solid, n.o.s.-Ferrous Sulphate
Packaging Group:	III

SECTION 15 - Regulatory Information

Symbol:



Xn Harmful



N



N Dangerous for the Environment

Risk phrases:

R22- Harmful if Swallowed

R36/37/38- Irritating to eyes, respiratory system and skin.

Safety phrases:

S: 2-22-26-39-46-60-61 Keep out of the reach of children. Do not breathe dust. Wash contaminated eyes with plenty of water and seek for doctors advice. Wear protective goggles and face protection. In case of ingestion seek for doctors advice immediately - show packaging or label. This material and its container must be disposed of as hazardous waste. Avoid release to the environment. Refer to special instructions / Material Safety data sheets.

SECTION 16 - Additional Information

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MSDS prepared by: AVK

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