

SECTION 1: Identification

1.1. Identification

Product form : Substance
 Substance name : Ferrous Sulfate Dried
 CAS-No. : 7720-78-7
 Formula : $\text{FeSO}_4 \cdot x\text{H}_2\text{O}$

1.2. Recommended use and restrictions on use

Use of the substance/mixture : Nutrient; Dietary Supplement

1.3. Supplier

Manufacturer

Jost Chemical Co.
 8150 Lackland Rd.
 Saint Louis, Missouri 63114
 T 314-428-4300 - F 314-428-4366
sds@jostchemical.com - www.jostchemical.com

1.4. Emergency telephone number

Emergency number : For Hazardous Materials [or Dangerous Goods] Incident Spill, Leak, Fire, Exposure, or Accident
 Call CHEMTREC Day or Night
 United States and Canada: 1-800-424-9300 / +1 703-527-3887
 Global: +1 703-741-5970

SECTION 2: Hazard(s) identification

2.1. Classification of the substance or mixture

GHS-US classification

Acute toxicity (oral) H302 Harmful if swallowed
 Category 4
 Full text of H statements : see section 16

2.2. GHS Label elements, including precautionary statements

GHS-US labeling

Hazard pictograms (GHS-US) :



Signal word (GHS-US) : Warning
 Hazard statements (GHS-US) : H302 - Harmful if swallowed
 Precautionary statements (GHS-US) : P264 - Wash hands, forearms and face thoroughly after handling.
 P270 - Do not eat, drink or smoke when using this product.
 P301+P312 - If swallowed: Call a poison center or doctor if you feel unwell
 P330 - Rinse mouth.
 P501 - Dispose of contents/container to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation

2.3. Other hazards which do not result in classification

No additional information available

2.4. Unknown acute toxicity (GHS US)

Not applicable

SECTION 3: Composition/Information on ingredients

3.1. Substances

Substance type : Mono-constituent

Name	Product identifier	%	GHS-US classification
Ferrous Sulfate Dried (Main constituent)	(CAS-No.) 7720-78-7	100	Acute Tox. 4 (Oral), H302

Ferrous Sulfate Dried

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Full text of hazard classes and H-statements : see section 16

3.2. Mixtures

Not applicable

SECTION 4: First-aid measures

4.1. Description of first aid measures

- First-aid measures general : Check the vital functions. Unconscious: maintain adequate airway and respiration. Respiratory arrest: artificial respiration or oxygen. Cardiac arrest: perform resuscitation. Victim conscious with labored breathing: half-seated. Victim in shock: on his back with legs slightly raised. Vomiting: prevent asphyxia/aspiration pneumonia. Prevent cooling by covering the victim (no warming up). Keep watching the victim. Give psychological aid. Keep the victim calm, avoid physical strain. Depending on the victim's condition: doctor/hospital.
- First-aid measures after inhalation : Remove person to fresh air and keep comfortable for breathing. Remove the victim into fresh air. Respiratory problems: consult a doctor/medical service.
- First-aid measures after skin contact : Wash immediately with lots of water. Soap may be used. Take victim to a doctor if irritation persists. Wash skin with plenty of water.
- First-aid measures after eye contact : Rinse immediately with plenty of water. Remove contact lenses, if present and easy to do. Continue rinsing. Do not apply neutralizing agents. Take victim to an ophthalmologist if irritation persists. Rinse eyes with water as a precaution.
- First-aid measures after ingestion : Rinse mouth with water. Immediately after ingestion: give lots of water to drink. Victim is fully conscious: immediately induce vomiting. Induce vomiting by giving a 0.9 % saline solution. Call Poison Information Centre (www.big.be/antigif.htm). Consult a doctor/medical service if you feel unwell. Ingestion of large quantities: immediately to hospital. Doctor: administration of chemical antidote. Doctor: gastric lavage. Call a poison center/doctor/physician if you feel unwell.

4.2. Most important symptoms and effects (acute and delayed)

- Potential Adverse human health effects and symptoms : Harmful if swallowed. Causes skin irritation. Causes serious eye irritation.
- Symptoms/effects after inhalation : AFTER INHALATION OF DUST: Dry/sore throat. Irritation of the respiratory tract. Irritation of the nasal mucous membranes.
- Symptoms/effects after skin contact : Red skin. Itching. Tingling/irritation of the skin.
- Symptoms/effects after eye contact : Irritation of the eye tissue.
- Symptoms/effects after ingestion : Nausea. Vomiting. AFTER INGESTION OF HIGH QUANTITIES: Uncontrollable bleeding tendency. Blood in vomit. FOLLOWING SYMPTOMS MAY APPEAR LATER: Blood in stool. Low arterial pressure. Blue/grey discolouration of the skin. Shock. Urine discolouration. Enlargement/affection of the liver.
- Chronic symptoms : No effects known.

4.3. Immediate medical attention and special treatment, if necessary

Treat symptomatically.

SECTION 5: Fire-fighting measures

5.1. Suitable (and unsuitable) extinguishing media

- Suitable extinguishing media : Adapt extinguishing media to the environment for surrounding fires. Water spray. Dry powder. Foam.

5.2. Specific hazards arising from the chemical

- Fire hazard : DIRECT FIRE HAZARD: Non combustible.
- Reactivity : Oxidizes slowly on exposure to air. Reacts with (strong) oxidizers. Reacts with (some) bases.

5.3. Special protective equipment and precautions for fire-fighters

- Precautionary measures fire : Exposure to fire/heat: keep upwind. Exposure to fire/heat: consider evacuation. Exposure to fire/heat: have neighborhood close doors and windows.
- Firefighting instructions : Dilute toxic gases with water spray.
- Protection during firefighting : Heat/fire exposure: compressed air/oxygen apparatus. Do not attempt to take action without suitable protective equipment. Self-contained breathing apparatus. Complete protective clothing.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

- Protective equipment : Gloves. Face-shield. Protective clothing. Dust cloud production: compressed air/oxygen apparatus. Dust cloud production: dust-tight suit.

Ferrous Sulfate Dried

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Emergency procedures	: Ventilate spillage area. Mark the danger area. Prevent dust cloud formation, e.g. by wetting. No naked flames. Wash contaminated clothes.
Measures in case of dust release	: In case of dust production: keep upwind. Dust production: have neighborhood close doors and windows.

6.1.2. For emergency responders

Protective equipment	: Do not attempt to take action without suitable protective equipment. For further information refer to section 8: "Exposure controls/personal protection".
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6.2. Environmental precautions

Avoid release to the environment.

6.3. Methods and material for containment and cleaning up

For containment	: Contain released product, pump into suitable containers. Plug the leak, cut off the supply. Knock down/dilute dust cloud with water spray.
Methods for cleaning up	: Mechanically recover the product. Stop dust cloud by humidifying. Scoop solid spill into closing containers. Wash down leftovers with plenty of water. Wash clothing and equipment after handling.
Other information	: Dispose of materials or solid residues at an authorized site.

6.4. Reference to other sections

For further information refer to section 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling	: Ensure good ventilation of the work station. Wear personal protective equipment. Avoid raising dust. Keep away from naked flames/heat. Measure the concentration in the air regularly. Carry operations in the open/under local exhaust/ventilation or with respiratory protection. Comply with the legal requirements. Remove contaminated clothing immediately. Clean contaminated clothing. Thoroughly clean/dry the installation before use.
Hygiene measures	: Observe strict hygiene. Keep container tightly closed. Do not eat, drink or smoke when using this product. Always wash hands after handling the product.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions	: Store in a well-ventilated place. Keep cool.
Storage temperature	: 50 °C
Heat-ignition	: KEEP SUBSTANCE AWAY FROM: heat sources.
Information on mixed storage	: KEEP SUBSTANCE AWAY FROM: oxidizing agents. (strong) bases. water/moisture.
Storage area	: Store in a dry area. Store at ambient temperature. Keep container in a well-ventilated place. Meet the legal requirements.
Special rules on packaging	: SPECIAL REQUIREMENTS: hermetical. watertight. dry. clean. correctly labelled. meet the legal requirements. Secure fragile packagings in solid containers.
Packaging materials	: SUITABLE MATERIAL: synthetic material. glass.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

No additional information available

8.2. Appropriate engineering controls

Appropriate engineering controls	: Ensure good ventilation of the work station.
Environmental exposure controls	: Avoid release to the environment.

8.3. Individual protection measures/Personal protective equipment

Personal protective equipment:

Dust production: dust mask with filter type P2. Impermeable protective gloves. Face shield. Protective goggles. Dustproof clothing.

Materials for protective clothing:

GIVE EXCELLENT RESISTANCE: butyl rubber. chlorosulfonated polyethylene. natural rubber. neoprene. polyurethane. PVC. nitrile rubber/PVC.
GIVE GOOD RESISTANCE: chloroprene rubber. chlorinated polyethylene. viton. GIVE LESS RESISTANCE: nitrile rubber

Hand protection:

Ferrous Sulfate Dried

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Gloves

Eye protection:

Face shield. In case of dust production: protective goggles. Safety glasses

Skin and body protection:

Protective clothing. In case of dust production: head/neck protection. In case of dust production: dustproof clothing

Respiratory protection:

Dust production: dust mask with filter type P2

Personal protective equipment symbol(s):



SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	: Solid
Appearance	: A light tan relatively free flowing fine granular.
Color	: Pure substance: white On exposure to air: turns yellow-brown Commercial substance: blue-green
Odor	: Odorless
Odor threshold	: No data available
pH	: 3.7 (10 %)
Melting point	: < -39 °C (Pour point)
Freezing point	: Not applicable
Boiling point	: 280 °C
Flash point	: Not applicable
Relative evaporation rate (butyl acetate=1)	: No data available
Flammability (solid, gas)	: Non flammable.
Vapor pressure	: 29 hPa (31 °C)
Relative vapor density at 20 °C	: Not applicable
Relative density	: 1.9
Specific gravity / density	: 1897 kg/m ³
Molecular mass	: 151.91 g/mol
Solubility	: Soluble in water. Soluble in glycerol. Water: 26 g/100ml
Log Pow	: No data available
Auto-ignition temperature	: Not applicable
Decomposition temperature	: > 300 °C
Viscosity, kinematic	: No data available
Viscosity, dynamic	: No data available
Explosion limits	: Not applicable
Explosive properties	: No data available
Oxidizing properties	: No data available

9.2. Other information

VOC content	: 0 %
Other properties	: Hygroscopic. Acid reaction.

SECTION 10: Stability and reactivity

10.1. Reactivity

Oxidizes slowly on exposure to air. Reacts with (strong) oxidizers. Reacts with (some) bases.

Ferrous Sulfate Dried

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

10.2. Chemical stability

Unstable on exposure to air. Hygroscopic.

10.3. Possibility of hazardous reactions

No dangerous reactions known under normal conditions of use.

10.4. Conditions to avoid

None under recommended storage and handling conditions (see section 7).

10.5. Incompatible materials

No additional information available

10.6. Hazardous decomposition products

Under normal conditions of storage and use, hazardous decomposition products should not be produced.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity (oral) : Oral: Harmful if swallowed. (Based on available data, the classification criteria are not met)
Acute toxicity (dermal) : Not classified
Acute toxicity (inhalation) : Not classified

Ferrous Sulfate Dried (7720-78-7)	
LD50 oral rat	500 mg/kg body weight (OECD 423: Acute Oral Toxicity – Acute Toxic Class Method, Rat, Female, Read-across)
ATE US (oral)	500 mg/kg body weight

Skin corrosion/irritation : Not classified (Based on available data, the classification criteria are not met)
pH: 3.7 (10 %)

Serious eye damage/irritation : Not classified (Based on available data, the classification criteria are not met)
pH: 3.7 (10 %)

Respiratory or skin sensitization : Not classified (Lack of data)

Germ cell mutagenicity : Not classified (Lack of data)

Carcinogenicity : Not classified (Lack of data)

Reproductive toxicity : Not classified (Lack of data)

Specific target organ toxicity – single exposure : Not classified (Lack of data)

Specific target organ toxicity – repeated exposure : Not classified (Lack of data)

Aspiration hazard : Not classified
(Lack of data)

Viscosity, kinematic : No data available

Potential Adverse human health effects and symptoms : Harmful if swallowed. Causes skin irritation. Causes serious eye irritation.

Symptoms/effects after inhalation : AFTER INHALATION OF DUST: Dry/sore throat. Irritation of the respiratory tract. Irritation of the nasal mucous membranes.

Symptoms/effects after skin contact : Red skin. Itching. Tingling/irritation of the skin.

Symptoms/effects after eye contact : Irritation of the eye tissue.

Symptoms/effects after ingestion : Nausea. Vomiting. AFTER INGESTION OF HIGH QUANTITIES: Uncontrollable bleeding tendency. Blood in vomit. FOLLOWING SYMPTOMS MAY APPEAR LATER: Blood in stool. Low arterial pressure. Blue/grey discolouration of the skin. Shock. Urine discolouration. Enlargement/affection of the liver.

Chronic symptoms : No effects known.

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general : Not classified as dangerous for the environment according to the criteria of Regulation (EC) No 1272/2008.

Ecology - air : Not included in the list of fluorinated greenhouse gases (Regulation (EU) No 517/2014). Not classified as dangerous for the ozone layer (Regulation (EC) No 1005/2009).

Ferrous Sulfate Dried

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Ecology - water : Harmful to crustacea. Slightly harmful to fishes. Not harmful to activated sludge. Slightly harmful to algae. Slightly harmful to bacteria. pH shift.

Ferrous Sulfate Dried (7720-78-7)	
LC50 fish 1	> 100 mg/l (OECD 203: Fish, Acute Toxicity Test, 96 h, Oryzias latipes, Semi-static system, Fresh water, Experimental value)
EC50 Daphnia 1	91 mg/l (OECD 202: Daphnia sp. Acute Immobilization Test, 48 h, Daphnia magna, Semi-static system, Fresh water, Experimental value)
EC50 Daphnia 2	152 mg/l (EC50; 48 h)
ErC50 (algae)	130 mg/l (OECD 201: Alga, Growth Inhibition Test, 72 h, Pseudokirchneriella subcapitata, Static system, Fresh water, Experimental value)

12.2. Persistence and degradability

Ferrous Sulfate Dried (7720-78-7)	
Persistence and degradability	Biodegradability in water: no data available.

12.3. Bioaccumulative potential

Ferrous Sulfate Dried (7720-78-7)	
BCF fish 1	2 - 20 (OECD 305: Bioconcentration: Flow-Through Fish Test, 28 day(s), Cyprinus carpio, Flow-through system, Fresh water, Experimental value, Heptahydrate)
Bioaccumulative potential	Low potential for bioaccumulation (BCF < 500).

12.4. Mobility in soil

Ferrous Sulfate Dried (7720-78-7)	
Ecology - soil	No (test)data on mobility of the substance available.

12.5. Other adverse effects

No additional information available

SECTION 13: Disposal considerations

13.1. Disposal methods

Regional legislation (waste) : LWCA (the Netherlands): KGA category 05.

Waste treatment methods : Dispose of contents/container in accordance with licensed collector's sorting instructions.

Product/Packaging disposal recommendations : Remove waste in accordance with local and/or national regulations. Hazardous waste shall not be mixed together with other waste. Different types of hazardous waste shall not be mixed together if this may entail a risk of pollution or create problems for the further management of the waste. Hazardous waste shall be managed responsibly. All entities that store, transport or handle hazardous waste shall take the necessary measures to prevent risks of pollution or damage to people or animals. Recycle/reuse. Remove to an authorized dump (Class I). Precipitate/make insoluble.

Additional information : Hazardous waste according to Directive 2008/98/EC, as amended by Regulation (EU) No 1357/2014 and Regulation (EU) No 2017/997.

SECTION 14: Transport information

Department of Transportation (DOT)

In accordance with DOT

Not regulated

Transportation of Dangerous Goods

Not regulated

Transport by sea

Not regulated

Air transport

Not regulated

Ferrous Sulfate Dried

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

SECTION 15: Regulatory information

15.1. US Federal regulations

Ferrous Sulfate Dried (7720-78-7)

Listed on the United States TSCA (Toxic Substances Control Act) inventory
Not subject to reporting requirements of the United States SARA Section 313

CERCLA RQ	1000 lb
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All components of this product are listed, or excluded from listing, on the United States Environmental Protection Agency Toxic Substances Control Act (TSCA) inventory

15.2. International regulations

CANADA

Ferrous Sulfate Dried (7720-78-7)

Listed on the Canadian DSL (Domestic Substances List)

EU-Regulations

No additional information available

National regulations

No additional information available

15.3. US State regulations

Ferrous Sulfate Dried (7720-78-7)

State or local regulations	U.S. - New Jersey - Right to Know Hazardous Substance List U.S. - Pennsylvania - RTK (Right to Know) List
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SECTION 16: Other information

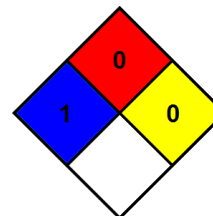
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Revision date : 10/26/2018
Other information : Initial preparation date.

Full text of H-phrases:

H302	Harmful if swallowed
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NFPA health hazard : 1 - Materials that, under emergency conditions, can cause significant irritation.
NFPA fire hazard : 0 - Materials that will not burn under typical fire conditions, including intrinsically noncombustible materials such as concrete, stone, and sand.
NFPA reactivity : 0 - Material that in themselves are normally stable, even under fire conditions.



Hazard Rating

Health : 1 Slight Hazard - Irritation or minor reversible injury possible
Flammability : 0 Minimal Hazard - Materials that will not burn
Physical : 0 Minimal Hazard - Materials that are normally stable, even under fire conditions, and will NOT react with water, polymerize, decompose, condense, or self-react. Non-Explosives.

SDS US (GHS HazCom 2012)

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product