



SAFETY DATA SHEET

According to 29 CFR 1910.1200

FERRIC SULFATE

Date of issue: September 01, 2023 Revision date: - Version: 1

SECTION 1.- IDENTIFICATION OF THE SUBSTANCE / MIXTURE AND OF THE COMPANY / UNDERTAKING

1.1 Product identifier

Product form Liquid
Substance name Ferric Sulfate
CAS No. 10028-22-5
Formula $Fe_2(SO_4)_3$
Synonyms Iron (III) Sulfate

1.2 Relevant identified uses of the substance or mixture and uses advised against

Use of the substance/mixture Fertilizers

1.3 Details of the supplier of the safety data sheet

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1.4 Emergency telephone number

Emergency number

CHEMTREC (24HR Emergency Telephone), call: 1-800-424-9300

SECTION 2.- HAZARD IDENTIFICATION

2.1 GHS-US classification

May be corrosive to metals	1	H290
Harmful if swallowed	4	H302
Causes skin irritation	2	H315
Causes serious eye damage	1	H318

2.2 Label elements

GHS-US labelling

Hazard pictograms (GHS-US)



Signal Word (GHS-US):

Danger

Hazard statement (GHS-US):

H290 May be corrosive to metals.

H302 Harmful if swallowed.

H315 Causes skin irritation.

H318 Causes serious eye damage.

Precautionary statements (GHS-US):

P234 Keep only in original container.

P264 Wash hands thoroughly after handling.

P270 Do not eat, drink or smoke when using this product.



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P280 Wear protective gloves/protective clothing/eye protection/face protection
P301+P312 IF SWALLOWED: call a POISON CENTER/doctor if you feel unwell.
P330 Rinse mouth.
P302+P352 IF ON SKIN: wash with plenty of water.
P332+P313 IF SKIN irritation occurs: get medical advice/attention.
P362+P364 Take off contaminated clothing and wash it before reuse.
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do – continue rinsing.
P310 Immediately call a POISON CENTER or doctor/physician.
P390 Absorb spillage to prevent material damage.
P406 Store locked up.
P501 Dispose of contents/container following federal, state, and local regulations.
None to our knowledge
Not applicable

2.3 Other hazards

2.4 Unknown acute toxicity (GHS-US)

SECCIÓN 3.- COMPOSITION / INFORMATION OF INGREDIENTS

3.1 Substance

Not applicable

3.2 Mixture

Name	Product identifier	%
Ferric Sulfate	(CAS No.) 10028-22-5	> 30.0

SECCIÓN 4.- FIRST AID MEASURE

4.1 Description of first aid measure

First-aid measures general

Check vital signs. Unconscious: keep airways clear and provide breathing assistance. Respiratory arrest: artificial respiration or oxygen. Cardiac arrest: perform CPR. Conscious victim with breathing difficulty: semi-upright position. Victim in shock: lying on back with legs slightly elevated. Vomiting: prevent choking or aspiration. Avoid cooling by covering the victim (without heating). Continue monitoring the victim. Provide psychological support. Keep the victim calm, and avoid physical strain. Depending on the victim's condition: seek medical attention/hospital. Never give anything by mouth to an unconscious person. If feeling unwell, seek medical attention (if possible, show the label).

First-aid measures after eye contact

Flush with water for at least 30 minutes, raising and lowering eyelids occasionally. Get medical attention if irritation persists.

First-aid measures after skin contact

Thoroughly wash the exposed area for at least 15 minutes. Remove contaminated clothing. Launder contaminated clothing before reuse. Get medical attention if irritation persists.

First-aid measures after inhalation

Remove the victim from the exposure site to fresh air, ensuring they exert minimal physical effort. If breathing has ceased, initiate rescue breathing (using universal precautions), and if cardiac activity has stopped, begin cardiopulmonary resuscitation (CPR). Seek immediate medical attention.



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First-aid measures after ingestion

If swallowed, if conscious, give plenty of water. Immediately call a physician. Never give anything by mouth to an unconscious person.

4.2 Most important

Symptoms/injuries after inhalation

Irritation of the respiratory tract. Pain / dry throat. Cough.

Symptoms/injuries after skin contact

Irritation of the skin. Redness. Pain.

Symptoms/injuries after eye contact

Redness of the eye tissue. Irritation of the eye tissue. Pain. Tearing.

Symptoms/injuries after ingestión

Low toxicity in small quantities, but large doses can cause nausea, vomiting, diarrhea, and black stools.

Chronic symptoms

Prolonged exposure to the eyes may cause discoloration. High repeated exposure could lead to excess iron accumulation in the body. Symptoms such as stomach discomfort, nausea, constipation, diarrhea, or black stools may occur. Chronic exposure may cause effects on the liver.

4.3 Indications of any immediate medical attention and special treatment needed

If exposed, concerned, or if symptoms persist, obtain medical attention/advice. If medical advice is necessary, have the product container or label on hand.

SECCIÓN 5.- FIREFIGHTING MEASURES

5.1 Extinguishing media

Suitable extinguishing media

Use the product in accordance with surrounding materials.

Unsuitable extinguishing media

DO NOT USE direct water streams.

5.2 Special hazard arising from the substance or mixture

Fire hazard

In case of fire, sulfur oxides (SOx) and iron oxide may be released.

Explosion hazard

Not available

Reactivity

Not available

5.3 Advice for firefighters

Precautionary measures fire

In case of fire/heating: stand against the wind. If exposed to fire/heat consider evacuation

Firefighting instructions

Spray packaging with water to prevent ignition if they are exposed to excessive heat or fire. Remove the packaging if they have not yet been reached by flames, and you can do so safely. Cool the packaging with water long after the fire has been extinguished, removing any remnants until all embers are eliminated. Prevent water used for firefighting or dilution from entering watercourses, drains, or springs.

Protection during firefighting

For major spills, use chemical-resistant protective clothing recommended specifically by the manufacturer. This may provide little or no thermal protection.

SECCIÓN 6.- ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment, and emergency procedures

6.1.1 For non-emergency personnel

Protective equipment

Special protective equipment: gloves, face shield, corrosion-resistant suit. For large spills/enclosed spaces: Level B or A equipment. Refer to 'Material Handling' to select protective clothing.

Emergency procedures

Secure the hazard area, do not allow any type of flame to ignite. Wash contaminated clothing. For large spills/confined spaces: consider evacuation. In case of hazardous reactions: stay



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Measures in case of dust release

upwind. In case of reactivity danger: consider evacuation. Avoid contact with eyes, skin, or clothing. Avoid inhaling dust, mist, vapor, or spray.

In case of dust production: keep upwind. Dust production: have neighborhood closed doors and windows.

6.1.2 For emergency responders

Where specialized garments are required to manage the spill/leak, refer to any information in Section 8 regarding suitable and unsuitable materials. Keep the area ventilated.

6.2 Environmental precautions

Avoid release to the environment. Do not allow the product to spread into the environment. Do not discharge into drains or rivers.

6.3 Methods and material for containment and cleaning up

Method for containment

Isolate and evacuate the area, and contain spills with absorbent material, sand, or dry earth. Use personal protective equipment for chemicals, gloves, goggles, chemical vapor masks, and face shields. Avoid direct contact with the product and inhalation of mists or fumes. Do not dispose of it through natural channels or sewage systems. Form barriers with sand or dry earth.

Method for cleaning up

Control the dust cloud with sprayed water. If the spill occurs on land, sweep or collect it in appropriate containers. Minimize dust generation.

6.4 Reference to other sections

For further information refer to section 8: Exposure-controls/personal protection

SECTION 7.- HANDLING AND STORAGE

7.1 Precautions for safe handling

Precautions for safe handling

Comply with the legal requirements. Remove contaminated clothing immediately. Clean contaminated clothing. Keep the substance free from contamination. Thoroughly clean/dry the installation before use. Do not discharge the waste into the drain. Avoid raising dust. Keep away from naked flames/heat. Observe normal hygiene standards. Keep the container tightly closed. Carry operations in the open/under local exhaust/ventilation or with respiratory protection.

Hygiene measures

Do not drink, eat, or smoke in the workplace. Always wash your hands after handling the product. Do not eat, drink, or smoke when using this product.

7.2 Conditions for safe storage, including any incompatibilities

Storage conditions

Keep only in the original container in a cool, well-ventilated place away from incompatible materials. Keep the container closed when not in use.

Incompatible products

Strong acids, strong bases, strong oxidizers, alkalis, and metals.

Heat-ignition

Not available

Storage area

Store in a dry area. Store at room temperature. Keep the container in a well-ventilated place. Meet the legal requirements.

Special rules on packaging

SPECIAL REQUIREMENTS: closing. Dry. Correctly labeled. Meet the legal requirements. Secure fragile packaging in solid containers.

Packaging materials

Not available

7.3 Specific end use(s)

No additional information available



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SECTION 8.- EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Name	ACGIH TLV	OSHA PEL	NIOSH IDLH
Ferric sulfate 10028-22-5	Not available	TWA: 1 mg/m ³ 8h (resp. fraction)	Not available

8.2 Exposure controls

Appropriate engineering controls	Local and general ventilation to ensure that the concentration does not exceed occupational exposure limits. Consider enclosing the process. Ensure control of process conditions. Continuously supply replacement air to replace removed air. Provide showers and eye wash stations.
Personal protective equipment	Safety goggles, face mask, gloves, rubber boots, PVC suits, protective helmet, respirator mask for inorganic vapors.
Material for protective clothing	PVC suits, rubber boots, impermeable fabric suits.
Hand protection	Gloves.
Eye protection	Use plastic safety goggles. And in areas at risk of splashes from solutions or mist, use a face mask. Maintain a shower and eye wash equipment in the workplace.
Skin and body protection	Under normal operating conditions, avoid skin contact by wearing complete impermeable fabric suits, including boots, gloves, jacket, and protective helmet. For emergencies, use PVC suits, rubber boots, and gloves.
Respiratory protection	Approved respirator mask for inorganic vapors.
Environmental exposure controls	Avoid release to the environment.

SECTION 9.- PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Physical state	Liquid
Appearance	Brown liquid
Odor	Slightly acidic
Color	Brown
Molecular mass	399.88 g/mol
Odor threshold	No data available
pH	< 1.0
pH solution	No data available
Relative evaporation rate (butyl acetate = 1)	No data available
Melting/Freezing point	< -50 °C
Boiling point	102.5 °C ± 2.5 °C
Flash point	No data available
Self-ignition temperature	No data available
Decomposition temperature	No data available
Flammability (solid, gas)	No data available
Vapor pressure	No data available



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Relative vapor density at 20 °C	No data available
Relative density	1.30
Solubility	Soluble in water (100%)
Log Pow	Not applicable (inorganic substance)
Log Kow	No data available
Viscosity, kinematic	No data available
Viscosity, dynamic	No data available
Explosive properties	No data available
Oxidizing properties	Not applicable
Explosive limits	No data available

9.2 Other information

No additional information available

SECTION 10.- STABILITY AND REACTIVITY

10.1 Reactivity	Reacts with strong oxidizers and poses a fire and explosion hazard. Can react violently with alkalis.
10.2 Chemical stability	Stable under recommended storage conditions.
10.3 Possibility of hazardous reactions	None under normal conditions of use.
10.4 Conditions to avoid	Direct sunlight. Heat. Incompatible materials.
10.5 Incompatible materials	Strong acids, strong bases, strong oxidizers, alkalis, and metals.
10.6 Hazardous decomposition products	Thermal decomposition generates corrosive vapors, like sulfur oxides.

SECTION 11.- TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Likely routes of exposure	Skin and eyes contact, inhalation, and ingestion.
Acute toxicity	Ingesting a small amount of this material will pose a serious health hazard.
Skin corrosion/irritation	It causes skin irritation. Symptoms include redness, itching, and pain. It may cause skin discoloration with irritation.
Serious eye damage/irritation	It causes serious eye damage.
Respiratory or skin sensitization	It can be corrosive to the respiratory tract.
Germ cell mutagenicity	Not classified.
Carcinogenicity	Not classified.
Reproductive toxicity	Not classified.
Specific target toxicity (single exposure)	May cause respiratory irritation.
Specific target toxicity (repeat exposure)	Prolonged exposure to the eyes may cause discoloration. High repeated exposure could lead to excess iron accumulation in the body. Symptoms such as stomach discomfort, nausea, constipation, diarrhea, or black stools may occur. Chronic exposure may cause effects on the liver.
Aspiration hazard	Irritates the respiratory tract. Symptoms may include coughing, and difficulty breathing.

Name	LD ₅₀ oral	LD ₅₀ dermal	LC ₅₀ inhalation
Ferric sulfate	2000 mg/kg (rat)	No data available	1.0 mg/m ³



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SECTION 12.- ECOLOGICAL INFORMATION

12.1 Toxicity

Ecology – General	Classification concerning the environment: not applicable.
Ecology – Air	Not classified as dangerous for ozone layer.
Ecology – Water	500 mg/L (<i>Brachydanio rerio</i> , 96 h) 42 mg/L (<i>Gambusia affinis</i> , 96 h)

12.2 Persistence and degradability

No data available

12.3 Bioaccumulative potential

The product generates no bioaccumulation.

12.4 Mobility in soil

This product can move with currents of surface water or groundwater because of its solubility in water.

12.5 Other adverse effects

Other information	The product is an inorganic substance/preparation. If hydrolyzed, metal hydroxide precipitates form (pH 4.0-11.0), thereby decreasing the water pH. If phosphates are present, metal phosphate complexes may form.
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SECCIÓN 13.- INFORMACIÓN RELATIVA A LA ELIMINACIÓN DE LOS PRODUCTOS

13.1 Waste treatment methods

Waste treatment methods	Waste generation should be avoided or minimized whenever possible. Disposal of this product, its solutions, and any derivatives must always comply with environmental protection and waste disposal legislation requirements and all requirements of local authorities. Dispose of surplus and non-recyclable products through an authorized contractor for disposal. Waste must not be disposed of untreated down drains or sewers unless it complies with the requirements of all competent authorities. Avoid dispersal of spilled material, and contact with soil, aquatic environment, drains, and sewers.
Waste disposal recommendations	Dispose of product residues and containers with all possible precautions. Care should be taken when handling empty containers that have not been cleaned or rinsed. Empty containers or liners may retain product residues.

SECTION 14.- TRANSPORT INFORMATION

14.1 UN Number	3264
14.2 UN proper shipping name	CORROSIVE LIQUID, INORGANIC, N.O.S. (Ferric sulfate 30%)
14.3 Class of hazards in transportation	8
14.4 Packaging group	I
14.3 Additional information	



Other information

No supplementary information available.



Overland transport
 Transport by sea
 Air transport

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No additional information available.
 No additional information available.
 No additional information available.

SECTION 15.- REGULATORY INFORMATION

International inventories

TSCA Not specified

TSCA – Toxic Substances Control Act Inventory Section 8(b). This material is listed or exempt.

DSL/NDSL - Domestic Substance List/Non-Domestic Substance List.

US Federal Regulations: Not listed in the Toxic Substances Control Act Inventory

SARA 311/312 Categories.

Acute Health Hazard No Chronic Health Hazard No Fire Hazard No
 Sudden Hazardous Pressure Release No Reactive Hazard No

Clean Water Act. None of these chemicals are listed under the Clean Water Act.

CERCLA. None of the ingredients are listed.

SECTION 16.- OTHER INFORMATION

NFPA	NFPA health Hazard	2	NFPA fire Hazard	0	NFPA instability Hazard	0	NFPA Special hazard	-
HMIS III	Health	2	Flammability	0	Physical	0	Personal protection	G

Safety glasses, gloves, and dust respirator

G



Made for: Química Pima, S.A. de C.V. Del Cobre No. 20 Parque Industrial. Hermosillo, Sonora, México. 83297.
Date of issue: September 01, 2023
Revision date: -
Revision note: -

IMPORTANT NOTE: Information in this SDS is from available published sources and is believed to be accurate, but is not exhaustive and will be used only as a guide, which is based on current knowledge of the chemical substance or mixture and applied to the appropriate product for safety precautions. No warranty, express or implied, is made and Pima Chemicals & Fertilizers, LLC and Quimica Pima, S.A. de C.V. assumes no liability resulting from the use of this SDS. The user must determine the suitability of this information for his application.

End of Safety Data Sheet