SAFETY DATA SHEET

according to the (US) Hazard Communication Standard (29 CFR 1910.1200)

Revision Date 06/05/2014 Version 1.2

SECTION 1. Identification

Product identifier

Product number	103965
Product name	Iron(II) sulfate heptahydrate for analysis EMSURE® ACS,ISO,Reag. Ph Eur
CAS-No.	7782-63-0

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

Identified uses	Reagent for analysis

Details of the supplier of the safety data sheet

Company	EMD Millipore Corporation | 290 Concord Road, Billerica, MA 01821, United States of America | General Inquiries: +1-978-715-4321 | Monday to Friday, 9:00 AM to 4:00 PM Eastern Time (GMT-5)
Emergency telephone	800-424-9300 CHEMTREC (USA) +1-703-527-3887 CHEMTREC (International) 24 Hours/day; 7 Days/week

SECTION 2. Hazards identification

GHS Classification

Acute toxicity, Category 4, Oral, H302
Skin irritation, Category 2, H315
Eye irritation, Category 2, H319

For the full text of the H-Statements mentioned in this Section, see Section 16.

GHS-Labeling

Hazard pictograms



Signal Word
Warning

Hazard Statements
H302 Harmful if swallowed.
H315 Causes skin irritation.

H319 Causes serious eye irritation.

Precautionary Statements
P302 + P352 IF ON SKIN: Wash with plenty of soap and water.
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

OSHA Hazards
This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200). This information is based on 29 CFR 1910.1200 criteria prior to adoption of the GHS and may deviate from the GHS information.

Other hazards
None known.

SECTION 3. Composition/information on ingredients

Formula	$FeSO_4 * 7H_2O$	$FeO_4S * 7H_2O$ (Hill)
Molar mass	278.02 g/mol	

Hazardous ingredients
Chemical Name (Concentration)
CAS-No.
Iron(II) sulphate heptahydrate (>= 90 % - <= 100 %)
7782-63-0
Exact percentages are being withheld as a trade secret.

SECTION 4. First aid measures

Description of first-aid measures
Inhalation
After inhalation: fresh air.

Skin contact
After skin contact: wash off with plenty of water. Remove contaminated clothing.

Eye contact
After eye contact: rinse out with plenty of water. Call in ophthalmologist.

Ingestion
After swallowing: immediately make victim drink water (two glasses at most). Consult a physician.

Never give anything by mouth to an unconscious person.

Most important symptoms and effects, both acute and delayed
Diarrhea, Bloody vomiting, irritant effects
The following applies to soluble iron compounds: nausea and vomiting after swallowing. The absorption of large quantities is followed by cardiovascular disorders. Toxic effect on liver and kidneys.

Indication of any immediate medical attention and special treatment needed
No information available.

SECTION 5. Fire-fighting measures

Extinguishing media

Suitable extinguishing media

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable extinguishing media

For this substance/mixture no limitations of extinguishing agents are given.

Special hazards arising from the substance or mixture

Not combustible.
Ambient fire may liberate hazardous vapors.
Fire may cause evolution of:
Sulfur oxides

Advice for firefighters

Special protective equipment for fire-fighters

Stay in danger area only with self-contained breathing apparatus. Prevent skin contact by keeping a safe distance or by wearing suitable protective clothing.

Further information

Suppress (knock down) gases/vapors/mists with a water spray jet. Prevent fire extinguishing water from contaminating surface water or the ground water system.

SECTION 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

Advice for non-emergency personnel: Avoid inhalation of dusts. Avoid substance contact. Ensure adequate ventilation. Evacuate the danger area, observe emergency procedures, consult an expert.

Advice for emergency responders: Protective equipment see section 8.

Environmental precautions

Do not empty into drains.

Methods and materials for containment and cleaning up

Cover drains. Collect, bind, and pump off spills.
Observe possible material restrictions (see sections 7 and 10).
Take up dry. Dispose of properly. Clean up affected area. Avoid generation of dusts.

SECTION 7. Handling and storage

Precautions for safe handling

Observe label precautions.

Conditions for safe storage, including any incompatibilities

Tightly closed. Dry. Protected from light.

Store at +15°C to +25°C (+59°F to +77°F).

SECTION 8. Exposure controls/personal protection

Exposure limit(s)

Ingredients

Basis	Value	Threshold limits	Remarks
Iron(II) sulphate heptahydrate 7782-63-0			
ACGIH	Time Weighted Average (TWA):	1 mg/m³	Expressed as: as Fe
NIOSH/GUIDE	Recommended exposure limit (REL):	1 mg/m³	Expressed as: as Fe
Z1A	Time Weighted Average (TWA):	1 mg/m³	Expressed as: as Fe

Engineering measures

Technical measures and appropriate working operations should be given priority over the use of personal protective equipment.

Individual protection measures

Protective clothing should be selected specifically for the workplace, depending on concentration and quantity of the hazardous substances handled. The chemical resistance of the protective equipment should be inquired at the respective supplier.

Hygiene measures

Immediately change contaminated clothing. Apply skin- protective barrier cream. Wash hands and face after working with substance.

Eye/face protection

Safety glasses

Hand protection

Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.

Other protective equipment:

protective clothing

Respiratory protection

required when dusts are generated.

Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

SECTION 9. Physical and chemical properties

Physical state	solid
Color	blue green
Odor	odorless
Odor Threshold	not applicable

pH	3 - 4 at 50 g/l 68 °F (20 °C)
Melting point	> 60 °C Elimination of water of crystallization
Boiling point	No information available.
Flash point	does not flash
Evaporation rate	No information available.
Flammability (solid, gas)	No information available.
Lower explosion limit	not applicable
Upper explosion limit	not applicable
Vapor pressure	No information available.
Relative vapor density	No information available.
Density	1.89 g/cm³ at 68 °F (20 °C)
Relative density	No information available.
Water solubility	ca. 400 g/l at 68 °F (20 °C)
Partition coefficient: n-octanol/water	No information available.
Autoignition temperature	No information available.
Decomposition temperature	> 572 °F (> 300 °C)
Viscosity, dynamic	not applicable
Explosive properties	Not classified as explosive.
Oxidizing properties	none
Ignition temperature	not combustible
Bulk density	ca. 600 kg/m³

SECTION 10. Stability and reactivity

Reactivity

See below

Chemical stability
Sensitivity to light
releases water of crystallization when heated.

Possibility of hazardous reactions
increased reactivity with:
Bases, Oxidizing agents

Conditions to avoid
Exposure to moisture.

Incompatible materials
no information available

Hazardous decomposition products
in the event of fire: See section 5.

SECTION 11. Toxicological information

Information on toxicological effects

Likely route of exposure
Eye contact, Skin contact, Ingestion

Acute oral toxicity
LD50 rat: 319 mg/kg (anhydrous substance) (Lit.)

absorption

Acute inhalation toxicity

Symptoms: Possible damages:, mucosal irritations

Skin irritation
Causes skin irritation.

Eye irritation
Causes serious eye irritation.

Sensitization
In animal experiments:
Result: negative
(IUCLID)

Genotoxicity in vitro
Ames test
Result: negative
(Lit.)

Specific target organ systemic toxicity - single exposure
The substance or mixture is not classified as specific target organ toxicant, single exposure.

Specific target organ systemic toxicity - repeated exposure
The substance or mixture is not classified as specific target organ toxicant, repeated exposure.

Aspiration hazard
Regarding the available data the classification criteria are not fulfilled.

Carcinogenicity

IARC	No ingredient of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
OSHA	No ingredient of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.
NTP	No ingredient of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.
ACGIH	No ingredient of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

Further information
Systemic effects:
After swallowing of large amounts:
Bloody vomiting, Diarrhea, drop in blood pressure
The following applies to soluble iron compounds: nausea and vomiting after swallowing. The absorption of large quantities is followed by cardiovascular disorders. Toxic effect on liver and kidneys.
Other dangerous properties can not be excluded.
Handle in accordance with good industrial hygiene and safety practice.

SECTION 12. Ecological information

Ecotoxicity

Toxicity to fish
LC50 Poecilia retiaculata (guppy): 925 mg/l; 96 h (IUCLID)

Toxicity to daphnia and other aquatic invertebrates
EC50 Daphnia magna (Water flea): 152 mg/l; 48 h (anhydrous substance) (IUCLID)

Toxicity to bacteria
EC0 Pseudomonas fluorescens: 100 mg/l; 24 h (anhydrous substance) (IUCLID)

Persistence and degradability
No information available.

Bioaccumulative potential
No information available.

Mobility in soil
No information available.

Additional ecological information
Discharge into the environment must be avoided.

SECTION 13. Disposal considerations

The information presented only applies to the material as supplied. The identification based on characteristic(s) or listing may not apply if the material has been used or otherwise contaminated. It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste identification and disposal methods in compliance with applicable regulations. Disposal should be in accordance with applicable regional, national and local laws and regulations.

SECTION 14. Transport information

Land transport (DOT)

Not classified as dangerous in the meaning of transport regulations.

Air transport (IATA)

Not classified as dangerous in the meaning of transport regulations.

Sea transport (IMDG)

Not classified as dangerous in the meaning of transport regulations.

SECTION 15. Regulatory information

United States of America

OSHA Hazards

Toxic by ingestion
Skin irritant
Eye irritant

This information is based on 29 CFR 1910.1200 criteria prior to adoption of the GHS, and may deviate from the GHS information on the label and in section 2.

SARA 311/312 Hazards

Acute Health Hazard

SARA 313

SARA 313: This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

SARA 302

SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

Clean Water Act

The following Hazardous Substances are listed under the U.S. CleanWater Act, Section 311, Table 116.4A:
Ingredients
Iron(II) sulphate heptahydrate

The following Hazardous Chemicals are listed under the U.S. CleanWater Act, Section 311, Table 117.3:
Ingredients
Iron(II) sulphate heptahydrate

DEA List I
Not listed

DEA List II
Not listed

US State Regulations

Massachusetts Right To Know
Ingredients
Iron(II) sulphate heptahydrate

Pennsylvania Right To Know
Ingredients
Iron(II) sulphate heptahydrate

New Jersey Right To Know
Ingredients
Iron(II) sulphate heptahydrate

California Prop 65 Components
This product does not contain any chemicals known to the State of California to cause cancer, birth, or any other reproductive defects.

Notification status

TSCA:	All components of the product are listed in the TSCA-inventory.
DSL:	All components of this product are on the Canadian DSL.

SECTION 16. Other information

Training advice
Provide adequate information, instruction and training for operators.

Full text of H-Statements referred to under sections 2 and 3.

H302	Harmful if swallowed.
H315	Causes skin irritation.
H319	Causes serious eye irritation.

Key or legend to abbreviations and acronyms used in the safety data sheet
Used abbreviations and acronyms can be looked up at www.wikipedia.org.

Revision Date06/05/2014

The information contained herein is based on the present state of our knowledge. It characterizes the product with regard to appropriate safety precautions. It does not represent a warranty of any product properties and we assume no liability for any loss or injury which may result from the use of this information. Users should conduct their own investigations to determine the suitability of the information.

All rights reserved. Millipore and the "M" Mark are registered trademarks of Merck KGaA, Darmstadt, Germany.