



OCI Company Ltd.

MSDS

Iron(II) Sulfate Heptahydrate

Section 1 - Chemical Product and Company Identification

TRADE NAMES : Iron(II) Sulfate Heptahydrate

Recommended use : Not available

Restriction of use : Not available

Company Identification

Company : OCI Company Ltd.

Address : 230, Dokbae-ro, Nam-gu, Incheon, KOREA

Tel No. : 82 - 32 - 860 – 6114

Section 2 - Hazards Identification

- 1) Hazard Classification
- Acute hazard (Oral) : 4
 - Skin corrosion/irritation : 2
 - Serious eye damage / Eye irritation : 1
 - Chronic hazard to the aquatic environment : 2

2) Warning signal

Symbol



Signal word

Danger

Hazard statement

H302 Harmful if swallowed

H315 Causes skin irritation

H318 Causes serious eye damage

H411 Harmful to aquatic life with long lasting effects

Prevention precautionary statements

P264 Wash thoroughly after handling

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

P273 Avoid release to the environment

P280 Wear protective gloves/protective clothing/eye protection/face protection

P301+P312 IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell.

P302+P352 IF ON SKIN: Wash with plenty of 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.
P310 Immediately call a POISON CENTER or doctor/physician.
P321 Specific treatment.
P330 Rinse mouth.
P332+P313 If skin irritation occurs: Get medical advice/attention.
P362+P364 Take off contaminated clothing and wash it before reuse.
P391 Collect spillage.
P501 Dispose of contents/container to the related laws.

3) NFPA

| | |
|---------------------|---|
| Health Rating | 3 |
| Flammability Rating | 0 |
| Reactivity Rating | 0 |

Section 3 - Composition, Information on Ingredients

COMPONENT: Iron(II) Sulfate Heptahydrate

CAS No.: 7782-63-0

PERCENTAGE: 100

Section 4 - First Aid Measures

General information: Get medical advice/attention if you feel unwell. Show this safety data sheet to the doctor in attendance.

Ingestion: Rinse mouth. Call a POISON CENTER or doctor/physician if you feel unwell.

Inhalation: Move to fresh air. Get medical attention if symptoms persist.

Skin contact: Wash skin thoroughly with soap and water. Get medical attention if irritation persists after washing. Wash contaminated clothing before reuse. Destroy or thoroughly clean contaminated shoes.

Eye contact: Immediately flush with plenty of water for at least 15 minutes. If easy to do, remove contact lenses. Get medical attention if symptoms persist.

Most important symptoms/effects, acute and delayed Symptoms: Irritating to eyes, respiratory system and skin. Harmful if swallowed.

Indication of immediate medical attention and special treatment needed Treatment: Symptoms may be delayed. Treat symptomatically.

Section 5 - Fire Fighting Measures

General fire hazards: No unusual fire or explosion hazards noted.

Suitable (and unsuitable) extinguishing media

Suitable extinguishing media: Use fire-extinguishing media appropriate for surrounding materials.

Unsuitable extinguishing media: None known.

Specific hazards arising from the chemical: During fire, gases hazardous to health may be formed.

Special protective equipment and precautions for firefighters

Special fire fighting procedures: Move containers from fire area if you can do so without risk. Use water spray to keep fire-exposed containers cool. Cool containers exposed to flames with water until well after the fire is out.

Special protective equipment for fire-fighters: Firefighters must use standard protective equipment including flame retardant coat, helmet with face shield, gloves, rubber boots, and in enclosed spaces, SCBA.

Section 6 - Accidental Release Measures

Personal precautions, protective equipment and emergency procedures: Keep unauthorized personnel away. Keep upwind. Ventilate closed spaces before entering them. Avoid inhalation of dust. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Use personal protective equipment. See Section 8 of the MSDS for Personal Protective Equipment.

Methods and material for containment and cleaning up: Sweep up and place in a clearly labeled container for chemical waste. Clean surface thoroughly to remove residual contamination.

Notification Procedures: Inform authorities if large amounts are involved.

Environmental precautions: Do not contaminate water sources or sewer. Prevent further leakage or spillage if safe to do so. Avoid release to the environment.

Section 7 - Handling and Storage

Precautions for safe handling: Minimize dust generation and accumulation. Wear appropriate personal protective equipment. Avoid inhalation of dust. Avoid contact with eyes, skin, and clothing. Do not taste or swallow. Do not eat, drink or smoke when using the product. Use only with adequate ventilation. Wash hands thoroughly after handling. See Section 8 of the MSDS for Personal Protective Equipment.

Conditions for safe storage, including any incompatibilities: Keep container tightly closed. Store in a well-ventilated place. Store in a dry place. Store locked up.

Section 8 - Exposure Controls, Personal Protection

Control parameters

Occupational exposure limits

| Chemical identity | Type | Exposure | |
|------------------------|------|---------------------|--|
| | | Limit values | Source |
| SULFURIC ACID, IRON(2) | TWA | 1 mg/m ³ | US. ACGIH Threshold Limit Values (2011) |
| SALT (1:1), | REL | 1 mg/m ³ | US. NIOSH: Pocket Guide to Chemical Hazards (2010) |
| HEPTAHYDRATE - as Fe | TWA | 1 mg/m ³ | US. OSHA Table Z-1-A (29 CFR 1910.1000) (1989) |

Appropriate engineering controls No data available.

Individual protection measures, such as personal protective equipment

General information: Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. An eye wash and safety shower must be available in the immediate work area.

Eye/face protection: Wear safety glasses with side shields (or goggles).

Skin protection

Hand protection: Chemical resistant gloves

Other: Wear suitable protective clothing.

Respiratory protection: In case of inadequate ventilation use suitable respirator. Air-purifying respirator with a high efficiency particulate filter.

Hygiene measures: Provide eyewash station and safety shower. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing to remove contaminants. Discard contaminated footwear that cannot be cleaned.

Section 9 - Physical and Chemical Properties

Appearance

Physical state : Solid (Hygroscopic)

Form : Crystals

Color : Green

Odor : Odorless

Odor threshold : No data available.

pH : 3.7 (10% Solution)

Melting point/freezing point : No data available.

Initial boiling point and boiling range : Not applicable

Flash Point : No data available.

Evaporation rate : No data available.

Flammability (solid, gas) : No data available.

Upper/lower limit on flammability or explosive limits

Flammability limit - upper (%) : No data available.

Flammability limit - lower (%) : No data available.

Explosive limit - upper (%) : No data available.

Explosive limit - lower (%) : No data available.

Vapor pressure : 14.6 mmHg (at 25°C)

Vapor density : Not applicable

Relative density : (1.898g/cm³)

Solubility(ies)

Solubility in water : 486000 mg/L

Solubility (other) : No data available.

Partition coefficient (n-octanol/water) : -0.37 (estimate)

Auto-ignition temperature : No data available.

Decomposition temperature : No data available.

Viscosity : 278.01

Section 10 - Stability and Reactivity

Reactivity: No dangerous reaction known under conditions of normal use.

Chemical stability: Material is stable under normal conditions.

Possibility of hazardous reactions: Hazardous polymerization does not occur.

Conditions to avoid: Excessive heat. Avoid conditions which create dust.

Incompatible materials: Strong oxidizing agents. Alkalies.

Hazardous decomposition products: Oxides of sulfur.

Section 11 - Toxicological Information

Information on likely routes of exposure

Ingestion: Harmful if swallowed.

Inhalation: May cause irritation to the respiratory system.

Skin contact: Causes skin irritation.

Eye contact: Causes serious eye irritation.

Information on toxicological effects**Acute toxicity (list all possible routes of exposure)**

Oral Product: LD 50 (Rat): 319 mg/kg

Dermal Product: No data available.

Inhalation Product: No data available.

Repeated dose toxicity Product: No data available.

Skin corrosion/irritation Product: Causes skin irritation.

Serious eye damage/eye irritation Product: Causes serious eye irritation.

Respiratory or skin sensitization Product: Not a skin sensitizer.

Carcinogenicity Product: This substance has no evidence of carcinogenic properties.

IARC Monographs on the Evaluation of Carcinogenic Risks to Humans:

No carcinogenic components identified

US. National Toxicology Program (NTP) Report on Carcinogens:

No carcinogenic components identified

US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050):

No carcinogenic components identified

Germ cell mutagenicity

In vitro Product: No mutagenic components identified

In vivo Product: No mutagenic components identified

Reproductive toxicity Product: No components toxic to reproduction

Specific target organ toxicity - single exposure Product: Respiratory tract irritation. Liver.

Specific target organ toxicity - repeated exposure Product: None known.

Aspiration hazard Product: Not classified

Other effects: None known.

Section 12 - Ecological Information

Ecotoxicity:**Acute hazards to the aquatic environment:**

Fish Product: LC 50 (Brook trout (*Salvelinus fontinalis*), 96 h): 0.41 mg/l

Aquatic invertebrates Product: EC 50 (Water flea (*Daphnia magna*), 48 h): 6.15 mg/l

Chronic hazards to the aquatic environment:

Fish Product: No data available.

Aquatic invertebrates Product: No data available.

Toxicity to Aquatic Plants Product: No data available.

Persistence and degradability

Biodegradation Product: Not inherently biodegradable.

BOD/COD ratio Product: No data available.

Bioaccumulative potential

Bioconcentration factor (BCF) Product: No data available on bioaccumulation.

Partition coefficient n-octanol / water (log Kow) Product: No data available.

Mobility in soil: The product is water soluble and may spread in water systems.

Other adverse effects: Very toxic to aquatic life with long lasting effects.

Section 13 - Disposal Considerations

Disposal instructions: Discharge, treatment, or disposal may be subject to national, state, or local laws. Do not allow to enter drains, sewers or watercourses.

Contaminated packaging: Since emptied containers retain product residue, follow label warnings even after container is emptied.

Section 14 - Transport Information

UN Number: 3077

Shipping Name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.

Hazard Class: 9

Packing Group: III

Marine Pollutant: : No data available

Safety measures : Fire F-A, Flow out S-F

Section 15 - Regulatory Information

US federal regulations

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

None present or none present in regulated quantities.

CERCLA Hazardous Substance List (40 CFR 302.4):

SULFURIC ACID, IRON(2) SALT (1:1), HEPTAHYDRATE Reportable quantity: 1000 lbs.

Superfund amendments and reauthorization act of 1986 (SARA)

Hazard categories

X Acute (Immediate) X Chronic (Delayed) Fire Reactive Pressure Generating

SARA 302 Extremely hazardous substance

None present or none present in regulated quantities.

SARA 304 Emergency release notification

Chemical identity RQ
SULFURIC ACID, IRON(2) SALT (1:1), HEPTAHYDRATE 1000 lbs.

SARA 311/312 Hazardous chemical

Chemical identity Threshold Planning Quantity
SULFURIC ACID, IRON(2) SALT (1:1), HEPTAHYDRATE 500 lbs

SARA 313 (TRI reporting)

None present or none present in regulated quantities.

Clean Water Act Section 311 Hazardous Substances (40 CFR 117.3)

SULFURIC ACID, IRON(2) SALT (1:1), HEPTAHYDRATE Reportable quantity: 1000 lbs.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130):

None present or none present in regulated quantities.

US state regulations

US. California Proposition 65

No ingredient regulated by CA Prop 65 present.

US. New Jersey Worker and Community Right-to-Know Act

SULFURIC ACID, IRON(2) SALT (1:1), HEPTAHYDRATE Listed

US. Massachusetts RTK - Substance List

SULFURIC ACID, IRON(2) SALT (1:1), HEPTAHYDRATE Listed

US. Pennsylvania RTK - Hazardous Substances

SULFURIC ACID, IRON(2) SALT (1:1), HEPTAHYDRATE Listed

US. Rhode Island RTK

SULFURIC ACID, IRON(2) SALT (1:1), HEPTAHYDRATE Listed

Inventory Status:

| | |
|--|--|
| Canada DSL Inventory List: | On or in compliance with the inventory |
| EU EINECS List: | On or in compliance with the inventory |
| US TSCA Inventory: | On or in compliance with the inventory |
| Australia AICS: | On or in compliance with the inventory |
| EINECS, ELINCS or NLP: | On or in compliance with the inventory |
| Japan (ENCS) List: | Not in compliance with the inventory. |
| China Inv. Existing Chemical Substances: | On or in compliance with the inventory |
| Korea Existing Chemicals Inv. (KECI): | On or in compliance with the inventory |
| Canada NDSL Inventory: | Not in compliance with the inventory. |
| Philippines PICCS: | On or in compliance with the inventory |
| New Zealand Inventory of Chemicals: | On or in compliance with the inventory |
| Japan ISHL Listing: | Not in compliance with the inventory. |
| Japan Pharmacopoeia Listing: | Not in compliance with the inventory. |

Section 16 - Other Information

Sources : KOSHA, National Emergency Management Agency

Issue date : 07/14/2016

Last updated date : 07/14/2016

Revision number : 0