

# Safety Data Sheet

according to OSHA HCS (29CFR 1910.1200) and WHMIS 2015 Regulations

Revision: January 23, 2020

## 1 Identification

- **Product identifier**
- **Trade name: Ferroin Indicator Solution**
- **Product code:** FEDFE3144-A
- **Recommended use and restriction on use**
- **Recommended use:** Laboratory chemicals
- **Restrictions on use:** No relevant information available.
- **Details of the supplier of the Safety Data Sheet**
- **Manufacturer/Supplier:**  
AquaPhoenix Scientific, Inc.  
860 Gitts Run Road  
Hanover, PA 17331  
Phone: (717)632-1291  
Toll-Free: (866)632-1291  
info@aquaphoenixsci.com
- **Distributor:**  
Fisher Science Education  
6771 Silver Crest Road,  
Nazareth, PA 18064  
(800) 955-1177
- **Emergency telephone number:**  
ChemTel Inc.  
(800)255-3924 (North America)  
+1 (813)248-0585 (International)

## 2 Hazard(s) identification

- **Classification of the substance or mixture**  
The product is not classified as hazardous according to the Globally Harmonized System (GHS).
- **Label elements**
- **GHS label elements:** Not regulated.
- **Hazard pictograms:** Not regulated.
- **Signal word:** None
- **Hazard statements:** None.
- **Precautionary statements:** None.
- **Other hazards:** There are no other hazards not otherwise classified that have been identified.

## 3 Composition/information on ingredients

- **Chemical characterization: Mixtures**

- **Components:**

7732-18-5	Water	>98%
7782-63-0	ferrous sulfate heptahydrate	<0.5%
	⚠ Acute Tox. 4, H302; Skin Irrit. 2, H315; Eye Irrit. 2A, H319	
5144-89-8	1, 10-phenanthroline monohydrate	<1%
	⚠ Acute Tox. 3, H301; Acute Tox. 3, H311; Acute Tox. 3, H331	

(Cont'd. on page 2)

# Safety Data Sheet

according to OSHA HCS (29CFR 1910.1200) and WHMIS 2015 Regulations

Revision: January 23, 2020

**Trade name: Ferroin Indicator Solution**

(Cont'd. of page 1)

· **Additional information:**

For the listed ingredient(s), the identity and/or exact percentage(s) are being withheld as a trade secret.  
For the wording of the listed Hazard Statements, refer to section 16.

## 4 First-aid measures

· **Description of first aid measures**

· **After inhalation:** Supply fresh air; consult doctor in case of complaints.

· **After skin contact:**

Rinse with warm water.

If skin irritation is experienced, consult a doctor.

· **After eye contact:**

Remove contact lenses if worn.

Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.

· **After swallowing:**

Rinse out mouth and then drink plenty of water.

Do not induce vomiting; immediately call for medical help.

· **Most important symptoms and effects, both acute and delayed:**

Nausea in case of ingestion.

May cause gastro-intestinal irritation if ingested.

· **Indication of any immediate medical attention and special treatment needed:**

No relevant information available.

## 5 Fire-fighting measures

· **Extinguishing media**

· **Suitable extinguishing agents:**

The product is not flammable.

Use fire fighting measures that suit the environment.

· **For safety reasons unsuitable extinguishing agents:** No relevant information available.

· **Special hazards arising from the substance or mixture**

Formation of toxic gases is possible during heating or in case of fire.

· **Advice for firefighters**

· **Protective equipment:**

Wear self-contained respiratory protective device.

Wear fully protective suit.

## 6 Accidental release measures

· **Personal precautions, protective equipment and emergency procedures**

Ensure adequate ventilation.

Use personal protective equipment as required.

· **Environmental precautions**

Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.

· **Methods and material for containment and cleaning up**

Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).

(Cont'd. on page 3)

# Safety Data Sheet

according to OSHA HCS (29CFR 1910.1200) and WHMIS 2015 Regulations

Revision: January 23, 2020

**Trade name: Ferroin Indicator Solution**

(Cont'd. of page 2)

Clean the affected area carefully; suitable cleaners are:

Warm water

· **Reference to other sections**

See Section 7 for information on safe handling.

See Section 8 for information on personal protection equipment.

See Section 13 for disposal information.

## 7 Handling and storage

· **Handling**

· **Precautions for safe handling:** Avoid splashes or spray in enclosed areas.

· **Information about protection against explosions and fires:** No special measures required.

· **Conditions for safe storage, including any incompatibilities**

· **Requirements to be met by storerooms and receptacles:**

Due to photo-sensitivity, store product in brown-glass receptacles.

Unsuitable material for receptacle: aluminium.

Store in cool, dry conditions in well sealed receptacles.

· **Information about storage in one common storage facility:**

Store away from foodstuffs.

Store away from reducing agents.

Do not store together with alkalis (caustic solutions).

· **Further information about storage conditions:** Store in cool, dry conditions in well sealed receptacles.

· **Specific end use(s)** No relevant information available.

## 8 Exposure controls/personal protection

· **Control parameters**

· **Components with limit values that require monitoring at the workplace:**

The following constituent is the only constituent of the product which has a PEL, TLV or other recommended exposure limit.

**7782-63-0 ferrous sulfate heptahydrate**

REL (USA)	Long-term value: 1 mg/m <sup>3</sup> as Fe
TLV (USA)	Long-term value: 1 mg/m <sup>3</sup> as Fe
LMPE (Mexico)	Long-term value: 1 mg/m <sup>3</sup> como Fe

· **Exposure controls**

· **General protective and hygienic measures:**

The usual precautionary measures for handling chemicals should be followed.

Keep away from foodstuffs, beverages and feed.

· **Engineering controls:** No relevant information available.

· **Breathing equipment:** Not required under normal conditions of use.

· **Protection of hands:**

(Cont'd. on page 4)

# Safety Data Sheet

according to OSHA HCS (29CFR 1910.1200) and WHMIS 2015 Regulations

Revision: January 23, 2020

Trade name: Ferroin Indicator Solution

(Cont'd. of page 3)



Protective gloves

· **Eye protection:**



Safety glasses

Follow relevant national guidelines concerning the use of protective eyewear.

- **Body protection:** Protective work clothing
- **Limitation and supervision of exposure into the environment** No special requirements.
- **Risk management measures** No special requirements.

## 9 Physical and chemical properties

### · Information on basic physical and chemical properties

#### · Appearance:

Form: Liquid  
Color: Not determined.

· Odor: Not determined.

· Odor threshold: Not determined.

· pH-value: Not determined.

· Melting point/Melting range: 0 °C (32 °F)

· Boiling point/Boiling range: 102-106 °C (215.6-222.8 °F)

· Flash point: The product is not flammable.

· Flammability (solid, gaseous): Not applicable.

· Auto-ignition temperature: Not determined.

· Decomposition temperature: Not determined.

· Danger of explosion: Product does not present an explosion hazard.

#### · Explosion limits

Lower: Not determined.

Upper: Not determined.

· Oxidizing properties: Not determined.

· Vapor pressure: Not determined.

#### · Density:

Relative density: Not determined.

Vapor density: Not determined.

Evaporation rate: Not determined.

#### · Solubility in / Miscibility with

Water: Fully miscible.

· Partition coefficient (n-octanol/water): Not determined.

(Cont'd. on page 5)

# Safety Data Sheet

according to OSHA HCS (29CFR 1910.1200) and WHMIS 2015 Regulations

Revision: January 23, 2020

**Trade name: Ferroin Indicator Solution**

(Cont'd. of page 4)

- **Viscosity**
  - Dynamic:** Not determined.
  - Kinematic:** Not determined.
- **Other information** No relevant information available.

## 10 Stability and reactivity

- **Reactivity:** No relevant information available.
- **Chemical stability:** Stable under normal temperatures and pressures.
- **Thermal decomposition / conditions to be avoided:**  
No decomposition if used and stored according to specifications.
- **Possibility of hazardous reactions**  
Reacts with certain metals.  
Toxic fumes may be released if heated above the decomposition point.  
Reacts with strong acids and oxidizing agents.
- **Conditions to avoid**  
Excessive heat.  
Direct sunlight.
- **Incompatible materials**  
Oxidizers  
Strong acids
- **Hazardous decomposition products**  
Under fire conditions only:  
Sulfur oxides (SO<sub>x</sub>)  
Toxic metal oxide smoke

## 11 Toxicological information

- **Information on toxicological effects**
- **Acute toxicity:** Based on available data, the classification criteria are not met.
- **LD/LC50 values that are relevant for classification:** None.
- **Primary irritant effect:**
- **On the skin:** Based on available data, the classification criteria are not met.
- **On the eye:** Based on available data, the classification criteria are not met.
- **Sensitization:** Based on available data, the classification criteria are not met.

- **IARC (International Agency for Research on Cancer):**

None of the ingredients are listed.

- **NTP (National Toxicology Program):**

None of the ingredients are listed.

- **OSHA-Ca (Occupational Safety & Health Administration):**

None of the ingredients are listed.

- **Probable route(s) of exposure:**

Ingestion.  
Inhalation.  
Eye contact.

(Cont'd. on page 6)

# Safety Data Sheet

according to OSHA HCS (29CFR 1910.1200) and WHMIS 2015 Regulations

Revision: January 23, 2020

**Trade name: Ferroin Indicator Solution**

(Cont'd. of page 5)

- Skin contact.
- **Germ cell mutagenicity:** Based on available data, the classification criteria are not met.
- **Carcinogenicity:** Based on available data, the classification criteria are not met.
- **Reproductive toxicity:** Based on available data, the classification criteria are not met.
- **STOT-single exposure:** Based on available data, the classification criteria are not met.
- **STOT-repeated exposure:** Based on available data, the classification criteria are not met.
- **Aspiration hazard:** Based on available data, the classification criteria are not met.

## 12 Ecological information

- **Toxicity**
- **Aquatic toxicity** No relevant information available.
- **Persistence and degradability** No relevant information available.
- **Bioaccumulative potential:** No relevant information available.
- **Mobility in soil:** No relevant information available.
- **Additional ecological information**
- **General notes:** Generally not hazardous for water.
- **Other adverse effects** No relevant information available.

## 13 Disposal considerations

- **Waste treatment methods**
- **Recommendation:**  
Smaller quantities can be disposed of with household waste.  
The user of this material has the responsibility to dispose of unused material, residues and containers in compliance with all relevant local, state and federal laws and regulations regarding treatment, storage and disposal for hazardous and nonhazardous wastes.
- **Uncleaned packagings**
- **Recommendation:** Disposal must be made according to official regulations.

## 14 Transport information

- |                                     |                |
|-------------------------------------|----------------|
| · <b>UN-Number</b>                  |                |
| · DOT, ADR/RID/ADN, IMDG, IATA      | Not regulated. |
| · <b>UN proper shipping name</b>    |                |
| · DOT, ADR/RID/ADN, IMDG, IATA      | Not regulated. |
| · <b>Transport hazard class(es)</b> |                |
| · DOT, ADR/RID/ADN, IMDG, IATA      |                |
| · Class                             | Not regulated. |
| · <b>Packing group</b>              |                |
| · DOT, ADR/RID/ADN, IMDG, IATA      | Not regulated. |
| · <b>Environmental hazards</b>      |                |

(Cont'd. on page 7)

# Safety Data Sheet

according to OSHA HCS (29CFR 1910.1200) and WHMIS 2015 Regulations

Revision: January 23, 2020

**Trade name: Ferroin Indicator Solution**

(Cont'd. of page 6)

- |  |                 |
|--|-----------------|
| · <b>Marine pollutant:</b>   | No              |
| · <b>Special precautions for user</b>  | Not applicable. |
| · <b>Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code</b> | Not applicable. |

## 15 Regulatory information

- **Safety, health and environmental regulations/legislation specific for the substance or mixture**
- **United States (USA)**
- **SARA**

### · **Section 302 (extremely hazardous substances):**

None of the ingredients are listed.

### · **Section 313 (Specific toxic chemical listings):**

None of the ingredients are listed.

### · **TSCA (Toxic Substances Control Act)**

7732-18-5 | Water

### · **Proposition 65 (California)**

#### · **Chemicals known to cause cancer:**

None of the ingredients are listed.

#### · **Chemicals known to cause developmental toxicity for females:**

None of the ingredients are listed.

#### · **Chemicals known to cause developmental toxicity for males:**

None of the ingredients are listed.

#### · **Chemicals known to cause developmental toxicity:**

None of the ingredients are listed.

#### · **EPA (Environmental Protection Agency):**

None of the ingredients are listed.

#### · **IARC (International Agency for Research on Cancer):**

None of the ingredients are listed.

#### · **Canadian Domestic Substances List (DSL):**

Not all ingredients listed.

## 16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

### · **Abbreviations and acronyms:**

ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road

IMDG: International Maritime Code for Dangerous Goods

DOT: US Department of Transportation

(Cont'd. on page 8)

# Safety Data Sheet

according to OSHA HCS (29CFR 1910.1200) and WHMIS 2015 Regulations

Revision: January 23, 2020

**Trade name: Ferroin Indicator Solution**

(Cont'd. of page 7)

IATA: International Air Transport Association  
CAS: Chemical Abstracts Service (division of the American Chemical Society)  
LC50: Lethal concentration, 50 percent  
LD50: Lethal dose, 50 percent  
OSHA: Occupational Safety & Health Administration  
Acute Tox. 3: Acute toxicity – Category 3  
Acute Tox. 4: Acute toxicity – Category 4  
Skin Irrit. 2: Skin corrosion/irritation – Category 2  
Eye Irrit. 2A: Serious eye damage/eye irritation – Category 2A

#### · Sources

Website, European Chemicals Agency ([echa.europa.eu](http://echa.europa.eu))  
Website, US EPA Substance Registry Services ([ofmpub.epa.gov/sorinternet/registry/substreg/home/overview/home.do](http://ofmpub.epa.gov/sorinternet/registry/substreg/home/overview/home.do))  
Website, Chemical Abstracts Registry, American Chemical Society ([www.cas.org](http://www.cas.org))  
Patty's Industrial Hygiene, 6th ed., Rose, Vernon, ed. ISBN: 978-0-470-07488-6  
Casarett and Doull's Toxicology: The Basic Science of Poisons, 8th Ed., Klaassen, Curtis D., ed., ISBN: 978-0-07-176923-5.  
Safety Data Sheets, Individual Manufacturers

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