



MATERIAL SAFETY DATA SHEET

1. Product and Company Identification

Material name 1,10-PHENANTHROLINE FERROUS SULFATE SOLUTION, 0.025 M in WATER
Catalog # 165
Version # 02
Revision date 25-Aug-2008
CAS # Mixture
Synonym(s) FERROIN * FERROUS TRIS(1,10-PHENANTHROLINE) SULFATE
Manufacturer information GFS Chemicals, Inc.
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Powell, OH 43065 US
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2. Hazards Identification

Emergency overview Health injuries are not known or expected under normal use.
OSHA regulatory status This product is considered not hazardous under 29 CFR 1910.1200 (Hazard Communication).
Potential health effects
Routes of exposure Eye contact.
Eyes Contact with eyes may cause irritation.
Skin Health injuries are not known or expected under normal use.
Inhalation Health injuries are not known or expected under normal use.
Ingestion Health injuries are not known or expected under normal use.
Potential environmental effects Ecological injuries are not known or expected under normal use.

3. Composition / Information on Ingredients

| Non-hazardous components | CAS # | Percent |
|-------------------------------------|------------|----------|
| WATER | 7732-18-5 | 90 - 100 |
| 1,10-PHENANTHROLINE FERROUS SULFATE | 14634-91-4 | 1 - 2.5 |

4. First Aid Measures

First aid procedures
Eye contact Rinse with water. Get medical attention if irritation develops or persists.
Skin contact Rinse skin with water/shower. Get medical attention if irritation develops or persists.
Inhalation If breathing is difficult, remove to fresh air and keep at rest in a position comfortable for breathing. Call a physician if symptoms develop or persist.
Ingestion Rinse mouth. If ingestion of a large amount does occur, call a poison control center immediately.
General advice If you feel unwell, seek medical advice (show the label where possible).

5. Fire Fighting Measures

Flammable properties Not a fire hazard. The product is not flammable.
Extinguishing media
Suitable extinguishing media Water. Water fog. Foam. Dry chemical powder. Carbon dioxide (CO₂). Use extinguishing agent suitable for type of surrounding fire.

Protection of firefighters

Protective equipment and precautions for firefighters Use water spray to cool unopened containers. Cool containers with flooding quantities of water until well after fire is out.

Specific methods In the event of fire, cool tanks with water spray. Use water spray to cool unopened containers.

6. Accidental Release Measures

Personal precautions Local authorities should be advised if significant spillages cannot be contained. Keep unnecessary personnel away.

Environmental precautions Prevent further leakage or spillage if safe to do so.

Methods for containment Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible.

Methods for cleaning up Wipe up with absorbent material (e.g. cloth, fleece). Clean contaminated surface thoroughly. After removal flush contaminated area thoroughly with water.

Never return spills in original containers for re-use.

7. Handling and Storage

Handling Handle and open container with care.

Storage Use care in handling/storage.

8. Exposure Controls / Personal Protection

Personal protective equipment

Respiratory protection No personal respiratory protective equipment normally required.

Hand protection Not normally needed.

Eye / face protection Safety glasses.

Skin protection No special protective equipment required.

General hygiene considerations Handle in accordance with good industrial hygiene and safety practice.

General Not normally needed.

9. Physical & Chemical Properties

Appearance Liquid.

Color Dark red.

Odor Odorless.

Odor threshold Not available.

Physical state Liquid.

Form Aqueous solution. Liquid.

pH Not available.

Melting point 32 °F (0 °C) estimated

Freezing point Not available.

Boiling point 212 °F (100 °C) estimated

Flash point Not available.

Evaporation rate Not available.

Flammability Not available.

Flammability limits in air, upper, % by volume Not available.

Flammability limits in air, lower, % by volume Not available.

Vapor pressure Not available.

Vapor density Not available.

Specific gravity 1.0001 estimated

Relative density 1 g/cm³ estimated

Solubility (water) Miscible

| | |
|--|---|
| Partition coefficient (n-octanol/water) | Not available. |
| Auto-ignition temperature | Not available. |
| Decomposition temperature | Not available. |
| Percent volatile | 98.3 % estimated |
| Molecular weight | 692.5400 |
| Molecular formula | (C ₁₂ H ₈ N ₂) ₃ FeSO ₄ |

10. Chemical Stability & Reactivity Information

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|---|--|
| Chemical stability | Stable at normal conditions. |
| Incompatible materials | Oxidizing materials. |
| Hazardous decomposition products | No hazardous decomposition products are known. |

11. Toxicological Information

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|----------------------------|---|
| Carcinogenicity | This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA. |
| Further information | This product has no known adverse effect on human health. |

12. Ecological Information

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|--------------------------------------|--|
| Ecotoxicity | This product has no known eco-toxicological effects. |
| Persistence and degradability | Not available. |

13. Disposal Considerations

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| Disposal instructions | This product, in its present state, when discarded or disposed of, is not a hazardous waste according to Federal regulations (40 CFR 261.4 (b)(4)). Under RCRA, it is the responsibility of the user of the product to determine, at the time of disposal, whether the product meets RCRA criteria for hazardous waste. Dispose in accordance with all applicable regulations. |
| Waste from residues / unused products | Not applicable. |

14. Transport Information

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|------------|-----------------------------------|
| DOT | Not regulated as dangerous goods. |
|------------|-----------------------------------|

15. Regulatory Information

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| US federal regulations | This product is not known to be a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200. All components are on the U.S. EPA TSCA Inventory List. |
|-------------------------------|---|

CERCLA/SARA Hazardous Substances - Not applicable.

CERCLA (Superfund) reportable quantity

None

Superfund Amendments and Reauthorization Act of 1986 (SARA)

| | |
|--------------------------|---|
| Hazard categories | Immediate Hazard - No Delayed Hazard - Yes Fire Hazard - No Pressure Hazard - No Reactivity Hazard - No |
|--------------------------|---|

Section 302 extremely hazardous substance No

Section 311 hazardous chemical Yes

Inventory status

| Country(s) or region | Inventory name | On inventory (yes/no)* |
|-----------------------------|---|------------------------|
| Australia | Australian Inventory of Chemical Substances (AICS) | No |
| Canada | Domestic Substances List (DSL) | Yes |
| Canada | Non-Domestic Substances List (NDSL) | No |
| China | Inventory of Existing Chemical Substances in China (IECSC) | No |
| Europe | European Inventory of New and Existing Chemicals (EINECS) | Yes |
| Europe | European List of Notified Chemical Substances (ELINCS) | No |
| Japan | Inventory of Existing and New Chemical Substances (ENCS) | No |
| Korea | Existing Chemicals List (ECL) | No |
| New Zealand | New Zealand Inventory | No |
| Philippines | Philippine Inventory of Chemicals and Chemical Substances (PICCS) | Yes |
| United States & Puerto Rico | Toxic Substances Control Act (TSCA) Inventory | Yes |

A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)

State regulations

This product does not contain a chemical known to the State of California to cause cancer, birth defects or other reproductive harm.

16. Other Information

Further information

HMIS® is a registered trade and service mark of the NPCA.

HMIS® ratings

Health: 0
Flammability: 0
Physical hazard: 1

NFPA ratings

Health: 0
Flammability: 0
Instability: 1

Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

Issue date

25-Aug-2008

This data sheet contains changes from the previous version in section(s):

This document has undergone significant changes and should be reviewed in its entirety.