

Safety Data Sheet
According to the (US) Hazard Communication Standard (29 CFR 1910.1200)

SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

| | | |
|----------------------------|--|---|
| Product Name | Ferric Chloride Hexahydrate | |
| NCL Catalog Number | F-10C | |
| Product Description | Laboratory chemical | |
| Manufacturer | EMD Chemicals Inc. | PO Box 70, 480 Democrat Road Gibbstown, NJ 08027 |
| Supplier | NCL of Wisconsin, Inc. Telephone: 1-800-648-7836 Email: nclabs@nclabs.com | PO Box 8, Birnamwood, WI 54414 Fax: 715-449-2454 Emergency Contact: 1-800-424-9300 (Chemtrec) |

SECTION 2: HAZARDS IDENTIFICATION

GHS Classification

| | |
|----------------|-----------------|
| Acute Toxicity | Oral Category 4 |
| Skin Corrosion | Category 1C |
| Eye Damage | Category 1 |
| Aquatic Acute | Category 2 |



Signal Word

Danger

Hazard Statements

| | |
|------|--|
| H302 | Harmful if swallowed. |
| H314 | Causes severe skin burns and eye damage. |
| H401 | Toxic to aquatic life. |

Precautionary Statements

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|----------------|--|
| P260 | Do not breathe dust. |
| P264 | Wash exposed skin 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+P330+P331 | IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. |
| P312 | Call a POISON CENTER or doctor if you feel unwell. |
| P303+P361+P353 | IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. |
| P363 | Wash contaminated clothing before reuse. |
| P304+P340 | IF INHALED: Remove person to fresh air and keep comfortable for breathing. |
| P310 | Immediately call a POISON CENTER or doctor. |
| 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. |
| P405 | Store locked up. |
| P501 | Dispose of contents/container to comply with local, state and federal regulations. |

Other Hazards Not Contributing to the Classification

None under normal conditions.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Substance

| Name | CAS # | Approximate % |
|------------------------------|------------|---------------|
| Ferric Chloride, Hexahydrate | 10025-77-1 | 100 |

SECTION 4: FIRST AID MEASURES

Description of First Aid Measures

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|-----------------------------------|--|
| General First Aid Measures | Never give anything by mouth to an unconscious person. Seek medical advice if you feel unwell. |
| If Inhaled | Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER or doctor if you feel unwell. |
| In Case of Skin Contact | Remove contaminated clothing and shower/wash exposed skin with mild soap and water. Rinse with warm water. Call a POISON CENTER or doctor/physician. |
| In Case of Eye Contact | Immediately flush eyes with plenty of water. Remove contact lenses, if present and easy to do. Continue rinsing. Call a POISON CENTER or doctor/physician. |
| If Swallowed | Rinse mouth. Do NOT induce vomiting. Immediately call a POISON CENTER or doctor/physician. |

Most Important Symptoms/Effects Acute and Delayed

| | |
|---------------------------|---|
| After Inhalation | Dry/sore throat. Coughing. Irritation of the respiratory tract. Respiratory difficulties. |
| After Skin Contact | Tingling/irritation of the skin. Caustic burns/corrosion of the skin. |
| After Eye Contact | Irritation of the eye tissue. Inflammation/damage of the eye tissue. Corrosion of the eye tissue on continuous exposure. |
| After Ingestion | Nausea, vomiting, irritation of the gastric intestinal mucosa. Burns to the gastric/intestinal mucosa, and urine discoloration. |

Indication of Immediate Medical Attention and Special Treatment Needed

Seek medical advice.

SECTION 5: FIRE-FIGHTING MEASURES

Extinguishing Media

Suitable Extinguishing Media Foam. Dry powder. Sand. Carbon dioxide. Water spray.

Unsuitable Extinguishing Media Do not use high pressure water stream.

Special Hazards Arising from the Chemical

Thermal decomposition generates corrosive vapors.

Special Protective Actions for Fire-Fighters

Wear self-contained breathing apparatus and protective clothing. Keep exposed containers cool with water spray.

SECTION 6: ACCIDENTAL RELEASE MEASURES

Personal Precautions, Protective Equipment and Emergency Procedures

Personal Precautions Use personal protective equipment (see section 8). Safety glasses, gloves, gas/dust mask. Evacuate area of non-essential personnel. Eliminate ignition sources.

Environmental Precautions Prevent entry to surface and ground waters.

Methods and Materials for Containment and Cleaning Up Sweep up into closing containers. Collect spillage. Store away from other materials. Ensure compliance with local, state and federal regulations.

SECTION 7: HANDLING AND STORAGE

Precautions for Safe Handling Avoid contact with eyes and skin. Avoid breathing dust. Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Provide good ventilation in process area to prevent formation of dust.

Conditions for Safe Storage Including any Incompatibilities Keep in a tightly closed container, stored in a cool, dry, ventilated area.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION**Control Parameters**

| Ferric Chloride, Hexahydrate (10025-77-1) | | |
|--|--------------------------------|---------------------|
| USA ACGIH | ACGIH TWA (mg/m ³) | 1 mg/m ³ |

Appropriate Engineering Controls

Material should be handled or transferred in a fume hood or with equivalent ventilation. Maintain eye-wash fountain and quick-drench facilities in work area.

Individual Protection Measures

Avoid all unnecessary exposure.

Eye/Face Protection

Use chemical safety goggles and/or a full face shield where splashing is possible. Contact lenses should not be worn when working with this material. Maintain eye-wash fountain and quick-drench facilities in work area.

Skin Protection

Rubber or neoprene gloves and additional protection including impervious boots, apron, or coveralls, as needed in areas of unusual exposure to prevent skin contact.

Respiratory Protection

Wear appropriate mask.

Other Information

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

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

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|--|-----------------------------|
| Physical State | Solid, crystalline |
| Color | Brown-yellow |
| Odor | Irritating odor to odorless |
| Odor Threshold | Not determined |
| pH | Not determined |
| Melting Point/Freezing Point | 37.06°C / Not determined |
| Initial Boiling Point and Boiling Range | 280.05°C |
| Flash Point | Not determined |
| Evaporation Rate | Not determined |
| Flammability (Solid, Gas) | Not determined |
| Upper/Lower Flammability/Explosive Limits | Not determined |
| Vapor Pressure | Not determined |
| Vapor Density | Not determined |
| Relative Density | Not determined |
| Solubility | Soluble in water |
| Partition Coefficient: n-octanol/water | Not determined |
| Auto-Ignition Temperature | Not determined |
| Decomposition Temperature | Not determined |
| Viscosity | Not determined |

SECTION 10: STABILITY AND REACTIVITY

| | |
|---|--|
| Reactivity | Reacts slowly with water to release toxic and corrosive gases. Reacts violently with some bases to release heat. |
| Chemical Stability | Unstable on exposure to moisture |
| Possibility of Hazardous Reactions | No data available |
| Conditions to Avoid | Incompatible materials and moisture |
| Incompatible Materials | No data available |
| Hazardous Decomposition Products | When heated to decomposition, can emit toxic gases, carbon dioxide, hydrogen chloride and iron oxide. |

SECTION 11: TOXICOLOGICAL INFORMATION

| | |
|--|---|
| Acute Toxicity | Harmful if swallowed. |
| Ferric Chloride, Hexahydrate (10025-77-1) | |
| LD50 oral rat | 316 mg/kg |
| Skin Corrosion/Irritation | Causes severe skin burns. |
| Serious Eye Damage/Irritation | Causes serious eye damage. |
| Respiratory or Skin Sensitization | Not classified |
| Germ Cell Mutagenicity | Not classified |
| Carcinogenicity | Not classified |
| Reproductive Toxicity | Not classified |
| Specific Target Organ Toxicity (Single Exposure) | Not classified |
| Specific Target Organ Toxicity (Repeated Exposure) | Not classified |
| Aspiration Hazard | Not classified |
| Potential Adverse Human Health Effects and Symptoms | No data available |
| After Inhalation | Dry/sore throat. Coughing. Irritation of the respiratory tract. Respiratory difficulties. |
| After Skin Contact | Tingling/irritation of the skin. Caustic burns/corrosion of the skin. |
| After Eye Contact | Irritation of the eye tissue. Inflammation/damage of the eye tissue. Corrosion of the eye tissue on continuous exposure. |
| After Ingestion | Nausea, vomiting, irritation of the gastric intestinal mucosa. Burns to the gastric/intestinal mucosa, and urine discoloration. |
| Other Information | Not available |

SECTION 12: ECOLOGICAL INFORMATION

| | |
|--|-----------------------------------|
| Ecology – Water Toxicity | Toxic to aquatic life. |
| Ferric Chloride, Hexahydrate (10025-77-1) | |
| LC50 fish 1 | 26 ppm |
| LC50 other aquatic organisms | 9.6 mg/l |
| LC50 fish 2 | 75.6 mg/l |
| EC50 Daphnia 2 | 296-424 mg/l |
| TLM fish 1 | 1.2 ppm |
| Persistence and Degradability | Not applicable |
| Bioaccumulative Potential | Not established |
| Mobility in Soil | Not established |
| Other Adverse Effects | Avoid release to the environment. |

SECTION 13: DISPOSAL CONSIDERATIONS

Methods of Disposal

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|---------------------------------|---|
| Disposal Recommendations | Dispose of contents/containers in accordance with local, state and federal regulations. |
| Other Information | Avoid release to the surrounding environment. |

SECTION 14: TRANSPORT INFORMATION

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|-----------------------------------|---|
| UN Number | UN3260 |
| UN Shipping Name | Corrosive solid, acid, inorganic, n.o.s (Ferric Chloride) |
| Transport Hazard Class(es) | 8 |

| | |
|------------------------------|----------------|
| Packing Group | III |
| Environmental Hazards | Not applicable |
| Transport in Bulk | Not applicable |
| Other Precautions | Not applicable |

SECTION 15: REGULATORY INFORMATION

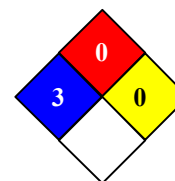
| | |
|---|---------------------------------|
| Ferric Chloride, Hexahydrate (10025-77-1) | |
| Not listed on the United States TSCA (Toxic Substances Control Act) inventory | |
| SARA Section 311/312 Hazard Classes | Immediate (acute) health hazard |

SECTION 16: OTHER INFORMATION

Revision Date: 04/06/2015

NFPA Hazards

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|----------------------|---|
| Health Hazard | 3: Short exposure could cause serious temporary or moderate residual injury. |
| Fire Hazard | 0: Materials that will not burn under typical fire conditions. |
| Reactivity | 0: Normally stable, even under fire exposure conditions, and are not reactive with water. |



HMIS III Rating

| | |
|----------------------------|--|
| Health | 3: Major injury likely unless prompt action is taken and medical treatment is given. |
| Flammability | 0: Materials that will not burn. |
| Physical Hazard | 0: Materials that are normally stable. |
| Personal Protection | F |

| F-10C | |
|---------------------|---|
| Health | 3 |
| Flammability | 0 |
| Physical Hazard | 0 |
| Personal Protection | F |

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END OF SAFETY DATA SHEET