Ferric Chloride MSDS

1. Chemical Product and Company Identification

- **Product Name:** Ferric Chloride (Iron(III) Chloride)
- **Chemical Formula:** $FeCl_3$
- **CAS Number:** 7705-08-0

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2. Composition / Information on Ingredients

- **Chemical Name:** Ferric Chloride
- **Concentration:** Typically 40–45% in aqueous solution
- **CAS Number:** 7705-08-0

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3. Hazards Identification

- **Emergency Overview:** Corrosive to skin, eyes, and mucous membranes.
- **Potential Health Effects:**
  - **Inhalation:** Irritation to respiratory tract
  - **Skin Contact:** Severe irritation or burns
  - **Eye Contact:** Severe damage or blindness
  - **Ingestion:** Harmful; causes burns to gastrointestinal tract

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4. First Aid Measures

- **Inhalation:** Move to fresh air. Seek medical attention if symptoms persist.
- **Skin Contact:** Remove contaminated clothing. Wash skin with soap and water.
- **Eye Contact:** Flush eyes with water for at least 15 minutes. Seek immediate medical attention.
- **Ingestion:** Do **not** induce vomiting. Rinse mouth and get medical help immediately.

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5. Fire Fighting Measures

- **Flash Point:** Not applicable (non-flammable)
- **Suitable Extinguishing Media:** Water spray, foam, CO_2, or dry chemical (for surrounding fire)
- **Special Hazards:** Emits toxic fumes (hydrogen chloride, iron oxides) when heated
- **Protective Equipment:** Self-contained breathing apparatus (SCBA), protective gear

6. Accidental Release Measures

- **Personal Precautions:** Wear protective gear (gloves, goggles, respirator)
- **Spill Response:** Contain and neutralize with lime or soda ash. Absorb with inert material.
- **Environmental Precautions:** Prevent from entering water bodies or drains.

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7. Handling and Storage

- **Handling:** Use with adequate ventilation. Avoid contact with eyes and skin.
- **Storage:** Store in a cool, dry, well-ventilated area. Keep container tightly closed. Avoid metals.

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8. Exposure Controls / Personal Protection

- **Exposure Limits:** (e.g., OSHA PEL or ACGIH TLV if available)
- **Engineering Controls:** Local exhaust ventilation
- **Personal Protective Equipment (PPE):**
    - **Eyes:** Chemical splash goggles
    - **Skin:** Gloves (PVC, neoprene), protective clothing
    - **Respiratory:** Use NIOSH-approved respirator if airborne concentrations are high

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9. Physical and Chemical Properties

- **Appearance:** Dark brown to yellow liquid (aqueous), or reddish-brown solid
- **Odor:** Slightly pungent
- **pH:** <2 (acidic)
- **Boiling Point:** ~280 °C (anhydrous)
- **Solubility:** Soluble in water

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10. Stability and Reactivity

- **Stability:** Stable under normal conditions
- **Incompatibilities:** Metals, strong oxidizers, bases
- **Hazardous Decomposition Products:** HCl gas, iron oxides
- **Polymerization:** Will not occur

11. Toxicological Information

- **Acute Effects:** Corrosive to tissues
- **LD50 (oral, rat):** ~316 mg/kg (anhydrous)
- **Chronic Exposure:** May cause liver/kidney damage upon prolonged exposure

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12. Ecological Information

- **Ecotoxicity:** Harmful to aquatic life
- **Persistence/Degradability:** No data available
- **Bioaccumulative Potential:** Low
- **Mobility in Soil:** May leach into groundwater

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13. Disposal Considerations

- **Waste Disposal:** Neutralize and dispose in accordance with local, regional, national regulations.
- **Container Disposal:** Rinse thoroughly before discarding or recycling.
