

Material Safety Data Sheet

Revision Date February 3, 2005 Head Office 9347 - 193 Street, Surrey, B.C., V4N 4E7	Prepared by David MacKinnon	Technical Information 1-800-201-8822 or support@mgchemicals.com Emergency Phone Canutech (613) 996-6666 Collect 24 hrs
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Section 1: Product Identification

MSDS Code: 415 - Powder

Name: Ferric Chloride Anhydrous

Related Part Numbers: 415-115G

Use: For etching printed circuits boards.

Section 2: Hazardous Ingredients

CAS#	Chemical Name	Percentage by weight	ACGIH TWA	Osha Pel	Osha Stel
7705-08-0	Ferric Chloride	99	1mg/m ³ (as soluble iron salt)	1mg/m ³ (as soluble iron salt)	n/e
7758-94-3	Ferrous Chloride	<1	1mg/m ³ (as soluble iron salt)	1mg/m ³ (as soluble iron salt)	n/e

Section 3: Hazards Identification

WHMIS Codes: D2B, E, F

NFPA Ratings: Health 2 Flammability 0 Reactivity 2

HMIS Ratings: Health 2 Flammability 0 Reactivity 2

Eyes: Corrosive. Contact with powder will cause severe eye burns, and corneal damage.

Skin: Corrosive. May cause severe skin irritation with possible burns.

Inhalation: May cause irritation to mucous membranes and reparatory tract.

Ingestion: May be corrosive to the gastrointestinal tract. May cause chemical burns in the mouth, throat, esophagus, and stomach.

Chronic: N/A

Section 4: First Aid Measure

- Eyes:** Remove contact lenses. Flush with water or saline for 20 minutes. Hold eyelids apart to ensure complete irrigation of eye/lid tissue. Get medical aid immediately.
- Skin:** Dust off excess before washing. Wash skin with large quantities of soap and water. Get medical aid if irritation develops or persists.
- Inhalation:** Immediately remove from exposure to fresh air. If breathing is difficult, give oxygen. Get medical aid.
- Ingestion:** Do not induce vomiting. If conscious, give 1-2 glasses of water or milk. Get medical aid.

Section 5: Fire Fighting Measures

Autoignition Temperature: n/a

Flash Point: n/a

LEL / UEL: n/a

Extinguishing Media: Use dry sand or earth to smother fire. Substance is noncombustible; use agent most appropriate to extinguish surrounding fire. **DO NOT USE WATER!** DO NOT get water inside containers. Contact professional fire-fighters immediately. Cool containers with flooding quantities of water until well after fire is out.

General Information: Not flammable

Section 6: Accidental Release Measures

Spill Procedure: Utilize protective clothing including boots, and protective equipment as appropriate. Sweep up material and place into a suitable non-metallic disposal container. Avoid generating dusty conditions. Provide ventilation. Do not expose spill to water.

Section 7: Handling and Storage

Handling: Protect against physical damage. Keep container closed and dry. Wash thoroughly after handling. Avoid contact with eyes, skin, and clothing. Do not ingest or inhale. Follow labeled warnings even after container is emptied. Emptied container may retain product residue.

Storage: Keep container closed when not in use. Store in a tightly closed container. Store in a cool, dry, well-ventilated area away from incompatible substances. Keep away from water. Store protected from moisture.

Section 8: Exposure Controls

Routes of entry: Eyes, ingestion, inhalation, and skin.

Ventilation: Use adequate general or local exhaust ventilation to keep airborne concentrations below exposure limits.

Personal Protection: Wear appropriate protective eyeglasses or chemical safety goggles. Wear appropriate protective clothing to prevent skin contact. Use a NIOSH approved respirator when necessary.

Section 9: Physical and Chemical Properties

Physical State:	Greenish Black Granular Solid	Odor:	None	Solubility:	Soluble	Evaporation Rate:	Not Applicable
Boiling Point:	305-317°C	Specific Gravity:	2.8-2.9	Vapor Pressure (MMHG):	3.9 @ 210.5°C	Vapor Density (Air=1):	Not Applicable
						pH:	1.0 for 2% Solution

Section 10: Stability and Reactivity

Stability:	Stable at normal temperatures and pressures.
Conditions to avoid:	Incompatible materials.
Incompatibilities:	Potassium and sodium metals. Refer to Section 7.
Polymerization:	Will not occur.
Decomposition:	Can release toxic chlorine gas at elevated temperatures above 289°C (553°F). Can release toxic hydrogen chloride on contact with water or steam at elevated temperatures.

Section 11: Toxicological Information

Sensitization: (effects of repeated exposure)	Not Available
Carcinogenicity: (risk of cancer)	Not Applicable
Teratogenicity: (risk of malformation in an unborn fetus)	Not Available



Reproductive Toxicity (risk of sterility):		Not Available			
Mutagenicity: (risk of heritable genetic effects):		Not Available			
Lethal Exposure Concentrations:	Ingestion(LD50):	1872 mg/kg (rat)	Inhalation (LC50):	n/e	Skin (LD50): n/e

Section 12: Ecological Information

General Information: Avoid runoff into storms and sewers which lead into waterways. Water runoff can cause environmental damage.

Environmental Impact Data: (percentage by weight)

CFC: 0 **HFC:** 0 **Cl.Solv.:** 0 **VOC:** 0 **HCFC:** 0 **ODP:** 0

Section 13: Disposal Information

General Information: Dispose of in accordance with all local, provincial, state, and federal regulations. Water runoff can cause environmental damage.

Section 14: Transportation Information

Ground:

Consumer Commodity, ORM-D

Air:

Do not ship by air.

Sea:

Shipping Name-Limited Quantity, Class 8, UN#1773, Packing Group III

Section 15: Regulatory Information

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all of the information required by the Controlled Products Regulations.

OSHA

This product is hazardous by definition of Hazard Communication Standard (29 CFR 1910, 1200).

SARA (Superfund Amendments and Reauthorization Act of 1986, USA, 40 CFR 372.4)

None of the chemicals in this product have a reportable quantity.

EPCRA (Emergency Planning and Right to Know Act, USA, 40 CFR 372.45)

This product does not contain any chemicals subject to the reporting requirements of section 313 Title III of the SARA of 1986 and 40 CFR part 372.

TSCA (Toxic Substances Control Act of 1976, USA)

All substances are TSCA listed.

Section 15: Regulatory Information cont'd

CAA (Clean Air Act, USA)

This product does not contain any class 1 ozone depleters.

This product does not contain any class 2 ozone depleters.

This product does not contain any chemicals listed as hazardous air pollutants.

California Proposition 65 (Chemicals known to cause cancer or reproductive toxicity, May 1, 1997 revision, USA)



This product does not contain any chemicals listed.

Health Canada

Labeling and containers used in this product are listed in compliance with Consumer Chemicals and Container regulations.

Environment Canada

Chemicals in this product are listed on the Domestic Substances List in the Canadian Environmental Protection Act

This product does not contain any ozone depleting substances.

Industry and Science Canada

Labeling, product identity, net quantity declaration, minimum printing type size heights, and packaging of this product is in compliance with the Consumer Packaging and Labeling Act and Regulations. This product is not slack filled in accordance to chapter 4 prohibitions.

RoHS (The restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment Regulations 2004).

This product is RoHS compliant.

Section 16: Other Information

Definitions: n/a = not applicable, n/e = not established

Disclaimer: This material safety data sheet is provided as an information resource only. M.G. Chemicals believes the information contained herein is accurate and compiled from reliable sources. It is the responsibility of the user to verify its validity. The buyer assumes all responsibility of using and handling the product in accordance with federal, state, and local regulations.