Iron (III) Chloride Solution
MSDS# 89303

Section 1 - Chemical Product and Company Identification

MSDS Name: Iron (III) Chloride Solution
Catalog Numbers: I/1045/PB17, I/1047/PB08, I/1050/PB08
Synonyms:
Company Identification: Fisher Scientific UK
Bishop Meadow Road, Loughborough
Leics. LE11 5RG
For information in Europe, call: (01509) 231166
Emergency Number, Europe:
01509 231166

Section 2 - Composition, Information on Ingredients

CAS#: 7705-08-0
Chemical Name: Ferric chloride
%: 60
EINECS#: 231-729-4
Hazard Symbols:
Risk Phrases:

CAS#: 7732-18-5
Chemical Name: Water
%: 40
EINECS#: 231-791-2
Hazard Symbols:
Risk Phrases:

Text for R-phrases: see Section 16
Hazard Symbols: C
Risk Phrases: 22 34

Section 3 - Hazards Identification

EMERGENCY OVERVIEW

Harmful if swallowed. Causes burns.
Potential Health Effects
Eye:
Causes eye burns. Contact produces irritation, tearing, and burning pain. Iron particles which become imbedded in the eye may lead to siderosis in varying degrees. A yellowish green or brown discoloration of the eye is the first sign of siderosis.

Skin:
Contact with skin causes irritation and possible burns, especially if the skin is wet or moist. May be absorbed through the skin.

Ingestion:
May cause severe and permanent damage to the digestive tract.
Causes gastrointestinal tract burns. May cause low blood pressure, rapid heartbeat, skin discoloration, and possible coma. Ingestion of iron compounds may cause hemorrhage and necrosis of the stomach with shock, severe diarrhea, and possible coma.

Inhalation:
Causes chemical burns to the respiratory tract. May cause systemic effects.

Chronic:
Prolonged or repeated exposure may cause adverse reproductive effects. May cause liver and kidney damage. Effects may be delayed. Laboratory experiments have resulted in mutagenic effects. Repeated exposure may increase iron levels in the liver, spleen and lymphatic system. Damage may occur in the spleen and liver.

Section 4 - First Aid Measures

Eyes:
Get medical aid immediately. Do NOT allow victim to rub eyes or keep eyes closed. Extensive irrigation with water is required (at least 30 minutes).

Skin:
Get medical aid immediately. Immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse. Destroy contaminated shoes. If water-reactive products are embedded in the skin, no water should be applied. The embedded products should be covered with a light oil.

Ingestion:
Do not induce vomiting. If victim is conscious and alert, give 2-4 cupfuls of milk or water. Never give anything by mouth to an unconscious person. Get medical aid immediately.

Inhalation:
Get medical aid immediately. Remove from exposure and move to fresh air immediately. If breathing is difficult, give oxygen. Do NOT use mouth-to-mouth resuscitation. If breathing has ceased apply artificial respiration using oxygen and a suitable mechanical device such as a bag and a mask.

Notes to Physician:
Treat symptomatically and supportively.

Section 5 - Fire Fighting Measures

General Information:
As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear. Material will not burn. During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion.

Extinguishing Media:
Substance is noncombustible; use agent most appropriate to extinguish surrounding fire.

Section 6 - Accidental Release Measures

General Information:
Use proper personal protective equipment as indicated in Section 8.

Spills/Leaks:
Vacuum or sweep up material and place into a suitable disposal container. Clean up spills immediately, observing precautions in the Protective Equipment section. Avoid generating dusty conditions. Provide ventilation.

Section 7 - Handling and Storage
Handling:
Wash thoroughly after handling. Remove contaminated clothing and wash before reuse. Use with adequate ventilation. Minimize dust generation and accumulation. Keep container tightly closed. Do not get on skin or in eyes. Do not ingest or inhale. Discard contaminated shoes.

Storage:
Store in a tightly closed container. Store in a cool, dry, well-ventilated area away from incompatible substances.

Engineering Controls:
Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower. Use adequate ventilation to keep airborne concentrations low.

Exposure Limits
CAS# 7705-08-0:
Belgium - TWA: (iron salts (soluble)): 1 mg/m3 TWA (as Fe)
Malaysia: (iron salts (soluble)): 1 mg/m3 TWA (as Fe)
Netherlands: (iron salts (soluble)): 0.1 mg/m3 MAC (as Fe)
Spain: (iron salts (soluble)): 1 mg/m3 VLA-ED (as Fe)

CAS# 7732-18-5:
Personal Protective Equipment
Eyes:
Wear chemical splash goggles and face shield.
Skin:
Wear appropriate protective gloves to prevent skin exposure.
Clothing:
Wear appropriate protective clothing to prevent skin exposure.
Respirators:
Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

Section 8 - Exposure Controls, Personal Protection

Section 9 - Physical and Chemical Properties
Physical State: Liquid
Color: dark brown
Odor: Not available
pH: Not available
Vapor Pressure: Not available
Viscosity: Not available
Boiling Point: Not available
Freezing/Melting Point: Not available
Autoignition Temperature: Not applicable
Flash Point: Not applicable
Explosion Limits: Lower: Not available
Explosion Limits: Upper: Not available
Decomposition Temperature: Not available
Solubility in water: Soluble in water.
Specific Gravity/Density: 
Molecular Formula: 
Molecular Weight:

Section 10 - Stability and Reactivity
Chemical Stability:
Stable under normal temperatures and pressures.
Conditions to Avoid:
  Incompatible materials, dust generation, excess heat.

Incompatibilities with Other Materials
  Metals, strong oxidizing agents, allyl chloride, epichlorohydrin, potassium, sodium.

Hazardous Decomposition Products
  Hydrogen chloride, chlorine.

Hazardous Polymerization
  Has not been reported.

Section 11 - Toxicological Information

RTECS#:
  CAS# 7705-08-0: LJ9100000
  CAS# 7732-18-5: ZC0110000

LD50/LC50:
  RTECS: CAS# 7705-08-0: Oral, mouse: LD50 = 200 mg/kg;
    Oral, rat: LD50 = 316 mg/kg;
  RTECS: CAS# 7732-18-5: Oral, rat: LD50 = >90 mL/kg;

Carcinogenicity:
  Ferric chloride -
  Not listed as a carcinogen by ACGIH, IARC, NTP, or CA Prop 65.
    Water -
  Not listed as a carcinogen by ACGIH, IARC, NTP, or CA Prop 65.
  Other:
    No information found.

Section 12 - Ecological Information

Ecotoxicity:
  Water flea Daphnia: TLm = 15 ppm; 96 Hr; fresh water
  Fish: Striped bass: LC50 = 6 mg/L; 24-96 Hr; Static bioassay (as iron)
  Fish: Striped bass: LC50 = 4 mg/L; 24-96 Hr; Static bioassay (as iron)

Section 13 - Disposal Considerations

Products considered hazardous for supply are classified as Special Waste and the disposal of such chemicals is covered by regulations which may vary according to location. Contact a specialist disposal company or the local authority or advice. Empty containers must be decontaminated before returning for recycling.

Section 14 - Transport Information

IATA
  Shipping Name: FERRIC CHLORIDE, SOLUTION
  Hazard Class: 8
  UN Number: 2582
  Packing Group: III

IMO
  Shipping Name: FERRIC CHLORIDE, SOLUTION
  Hazard Class: 8
  UN Number: 2582
  Packing Group: III

RID/ADR
  Shipping Name: FERRIC CHLORIDE, SOLUTION
  Hazard Class: 8
  UN Number: 2582
  Packing Group: III

USA RQ: CAS# 7705-08-0: 1000 lb final RQ; 454 kg final RQ

Section 15 - Regulatory Information

European/International Regulations
  European Labeling in Accordance with EC Directives
Hazard Symbols: C
Risk Phrases:
R 22 Harmful if swallowed.
R 34 Causes burns.
Safety Phrases:
S 26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
S 36/37/39 Wear suitable protective clothing, gloves and eye/face protection.
S 45 In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

WGK (Water Danger/Protection)
CAS# 7705-08-0: 1
CAS# 7732-18-5: Not available

Canada
CAS# 7705-08-0 is listed on Canada's DSL List
CAS# 7732-18-5 is listed on Canada's DSL List

US Federal
TSCA
CAS# 7705-08-0 is listed on the TSCA Inventory.
CAS# 7732-18-5 is listed on the TSCA Inventory.

Section 16 - Other Information
Text for R-phrases from Section 2
MSDS Creation Date:
7/07/1999
Revision #6 Date
5/22/2007
Revisions were made in Sections:
2, 3, 15

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