MSDS MATERIAL SAFETY DATA SHEET

HI-VALLEY CHEMICAL INC. \ LAB SUPPLY
•1134 WEST 850 NORTH CENTERVILLE, UTAH 84014 •
(801) 295-9591 • www.hvchemical.com

FERRIC CHLORIDE SOLUTION

1. === Product Identification ===

Synonyms: Iron (III) Chloride Solution
CAS No.: 7705-08-0
Molecular Weight: Not applicable to mixtures.
Chemical Formula: FeCl3 in H2O

---

2. === Composition/Information on Ingredients ===

Ingredient	CAS No	Percent	Hazardous
Ferric Chloride	7705-08-0	35 - 45%	Yes
Water	7732-18-5	55 - 65%	No

---

3. === Hazards Identification ===

Emergency Overview

DANGER! CORROSIVE. CAUSES BURNS TO ANY AREA OF CONTACT. HARMFUL IF SWALLOWED OR INHALED. AFFECTS THE LIVER.

Health Rating: 2 - Moderate
Flammability Rating: 0 - None
Reactivity Rating: 2 - Moderate
Contact Rating: 3 - Severe (Corrosive)
Lab Protective Equip: GOGGLES & SHIELD; LAB COAT & APRON; VENT HOOD; PROPER GLOVES
Storage Color Code: White (Corrosive)

Potential Health Effects

Inhalation:
Extremely destructive to tissues of the mucous membranes and upper respiratory tract. Symptoms may include burning sensation, coughing, wheezing, laryngitis, shortness of breath, headache, nausea and vomiting.

Ingestion:
Corrosive. Swallowing can cause severe burns of the mouth, throat, and stomach. Can cause sore throat, vomiting, diarrhea. Low systemic toxicity in small quantities but larger doses may cause systemic effects. Pink urine discoloration is a strong indicator of iron poisoning. Liver damage, coma and death may follow, sometimes delayed as long as three days.

Skin Contact:
Corrosive. Symptoms of redness, pain, and severe burn can occur.

Eye Contact:
Corrosive. Contact can cause blurred vision, redness, pain and severe tissue burns.

Chronic Exposure:
Repeated ingestion may cause liver damage. Prolonged exposure of the eyes may cause discoloration.

Aggravation of Pre-existing Conditions:
No information found.

---

4. ==First Aid Measures ==

Inhalation:
Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention immediately.

Ingestion:
If swallowed, DO NOT INDUCE VOMITING. Give large quantities of water. Never give anything by mouth to an unconscious person. Get medical attention immediately.

Skin Contact:
Immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Get medical attention immediately. Wash clothing before reuse. Thoroughly clean shoes before reuse.

Eye Contact:
Immediately flush eyes with plenty of water for at least 15 minutes, lifting lower and upper eyelids occasionally. Get medical attention immediately.

5. === Fire Fighting Measures ===

Fire:
Not considered to be a fire hazard. Irritating hydrogen chloride fumes may form in fire.
Explosion:
Not considered to be an explosion hazard.
Fire Extinguishing Media:
Water, dry chemical, foam or carbon dioxide. Do not allow water runoff to enter sewers or waterways.
Special Information:
In the event of a fire, wear full protective clothing and NIOSH-approved self-contained breathing apparatus with full facepiece operated in the pressure demand or other positive pressure mode.

6. === Accidental Release Measures ===

Ventilate area of leak or spill. Wear appropriate personal protective equipment as specified in Section 8. Isolate hazard area. Keep unnecessary and unprotected personnel from entering. Contain and recover liquid when possible. Collect liquid in an appropriate container or absorb with an inert material (e. g., vermiculite, dry sand, earth), and place in a chemical waste container. Do not use combustible materials, such as saw dust. Do not flush to sewer! US Regulations (CERCLA) require reporting spills and releases to soil, water and air in excess of reportable quantities. The toll free number for the US Coast Guard National Response Center is (800) 424-8802.

7. === Handling and Storage ===

Keep in a tightly closed container, stored in a cool, dry, ventilated area. Protect against physical damage. Isolate from incompatible substances. Containers of this material are hazardous when empty since they retain product residues; observe all warnings for the product.

8. === Exposure Controls /Personal Protection ===

Airborne Exposure Limits:
-ACGIH Threshold Limit Value (TLV):
1 mg/m3 (TWA) soluble iron salt as Fe
Ventilation System:
A system of local and/or general exhaust is recommended to keep employee exposures below the Airborne Exposure Limits. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing

dispersion of it into the general work area. Please refer to the ACGIH document, *Industrial Ventilation, A Manual of Recommended Practices*, most recent edition, for details.

Personal Respirators (NIOSH Approved):
If the exposure limit is exceeded and engineering controls are not feasible, a full facepiece particulate respirator (NIOSH type N100 filters) may be worn for up to 50 times the exposure limit or the maximum use concentration specified by the appropriate regulatory agency or respirator supplier, whichever is lowest. If oil particles (e.g. lubricants, cutting fluids, glycerine, etc.) are present, use a NIOSH type R or P filter. For emergencies or instances where the exposure levels are not known, use a full-facepiece positive-pressure, air-supplied respirator. WARNING: Air-purifying respirators do not protect workers in oxygen-deficient atmospheres.

Skin Protection:
Wear impervious protective clothing, including boots, gloves, lab coat, apron or coveralls, as appropriate, to prevent skin contact.

Eye Protection:
Use chemical safety goggles and/or a full face shield where splashing is possible. Maintain eye wash fountain and quick-drench facilities in work area.

---

9. === Physical/Chemical Properties ===

Appearance:
Orange to brown liquid.

Odor:
Acid odor.

Solubility:
Complete (100%)

Specific Gravity:
1.40

pH:
No information found.

% Volatiles by volume @ 21C (70F):
55-65

Boiling Point:
230C (446F)

Melting Point:
No information found.

Vapor Density (Air=1):
No information found.

Vapor Pressure (mm Hg):
No information found.

Evaporation Rate (BuAc=1):
No information found.

10. === Stability and Reactivity Data ===

Stability:
Stable under ordinary conditions of use and storage.
Hazardous Decomposition Products:
May produce hydrogen chloride.
Hazardous Polymerization:
This substance does not polymerize.
Incompatibilities:
Metals, allyl chloride, sodium, potassium.
Conditions to Avoid:
Incompatibles.

11. === Toxicological Information ===

Oral rat LD50: 450 mg/kg (anhydrous); investigated as a mutagen, reproductive effector.

--------\Cancer Lists\----------

Ingredient	---NTP Carcinogen--- Known	Anticipated	IARC Category
Ferric Chloride (7705-08-0)	No	No	None
Water (7732-18-5)	No	No	None

12. === Ecological Information ===

Environmental Fate:
No information found.
Environmental Toxicity:
No information found.

13. === Disposal Considerations ===

Whatever cannot be saved for recovery or recycling should be managed in an appropriate and approved waste facility. Although not a listed RCRA hazardous waste, this material may exhibit one or more characteristics of a hazardous waste and require appropriate analysis to determine specific disposal requirements. Processing, use or contamination of this product may change the waste management options. State and local disposal regulations may differ from federal disposal regulations. Dispose of container and unused contents in accordance with federal, state and local requirements.

14. === MSDS Transport Information ===

Ferric Chloride, Solution, 8, UN 2583, PG III
Label Required: Corrosive

15. === Regulatory Information ===

--------\Chemical Inventory Status - Part 1\----------

Ingredient	TSCA	EC	Japan	Australia
Ferric Chloride (7705-08-0)	Yes	Yes	Yes	Yes
Water (7732-18-5)	Yes	Yes	Yes	Yes

--------\Chemical Inventory Status - Part 2\----------

Ingredient	Korea	--Canada-- DSL	NDSL	Phil.
Ferric Chloride (7705-08-0)	Yes	Yes	No	Yes
Water (7732-18-5)	Yes	Yes	No	Yes

--------\Federal, State & International Regulations - Part 1\--------

Ingredient	-SARA 302- RQ	TPQ	------SARA 313------ List	Chemical Catg.
Ferric Chloride (7705-08-0)	No	No	No	No

```
  Water (7732-18-5)                          No     No       No
No

  --------\Federal, State & International Regulations - Part 2\--------
--------

                                                          -RCRA-     -
TSCA-
  Ingredient                                 CERCLA     261.33     8(d)
  ---------------------------------------- ------     ------    -----
-
  Ferric Chloride (7705-08-0)                1000       No         No
  Water (7732-18-5)                          No         No         No

Chemical Weapons Convention:  No     TSCA 12(b):  No     CDTA:  No
SARA 311/312:  Acute: Yes      Chronic: Yes  Fire: No  Pressure: No
Reactivity: No          (Mixture / Liquid)
```

Australian Hazchem Code: None allocated.
Poison Schedule: None allocated.
WHMIS:
This MSDS has been prepared according to the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all of the information required by the CPR.

---

16. === Other Information ===

NFPA Ratings: Health: **3** Flammability: **0** Reactivity: **0**
Label Hazard Warning:
DANGER! CORROSIVE. CAUSES BURNS TO ANY AREA OF CONTACT. HARMFUL IF SWALLOWED OR INHALED. AFFECTS THE LIVER.
Label Precautions:
Do not get in eyes, on skin, or on clothing.
Do not breathe mist.
Keep container closed.
Use only with adequate ventilation.
Wash thoroughly after handling.
Label First Aid:
In case of contact, immediately flush eyes or skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse. If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. If swallowed, DO NOT INDUCE VOMITING. Give large quantities of water. Never give anything by mouth to an unconscious person. In all cases get medical attention immediately.
Product Use:
Laboratory Reagent.

High Valley Products, Inc. provides the information contained herein in good faith but makes no representation as to its comprehensiveness or accuracy. This document is intended only as a guide to the appropriate precautionary handling of the material by a properly trained person using this product. Individuals receiving the information must exercise their independent judgment in determining its appropriateness for a particular purpose.

Revision Date 9-21-2006