Safety
Data
Sheet

U·E·I Systems
A UEI® GROUP COMPANY

9090 Nieman • Overland Park, KS 66214 • (913) 541-0503 • Toll Free: 800-221-9059 • sales@ueisystems.com • ueisystems.com

Section 1 Chemical Product and Company Identification

Product Identifier GPC® High Copper Ferric Chloride

Product Number IR-CHE7305

General Use Etching solution

Company Address UEI Systems®, a UEI Group Company
9090 Nieman Road
Overland Park, KS 66214 USA

Phone +1 800 221 9059 or +1 913 541 0503

Emergency Contact Number CHEMTEL – Available 24 hours/day, 7 days/week
Domestic North America: +1 800 255 3924
International: +1 813 248 0585

Section 2 Hazards Identification

GHS Classification

Hazard Class	Hazard Category	Route of Exposure
Corrosive to metals	1	–
Skin Irritation	2	–
Serious Eye Damage	1	–

GHS Labeling

Contains Ferric Chloride (7705-08-0) Hydrochloric Acid (7647-01-0)

Danger

Hazard Statements
May be corrosive to metals
Causes skin irritation
Causes serious eye damage

Precautionary Statements
Keep only in original container
Wash skin thoroughly after handling
Wear protective gloves/protective clothing/eye protection/face protection

Response
If On Skin Wash with plenty of soap and water
If In Eyes: Rinse cautiously with water for several minutes.
Remove contact lenses, if present and easy to do. Continue rinsing.
Immediately call a **Poison Center** or doctor/ physician.
If Skin Irritation Occurs: Get medical advice/attention. Take off contaminated clothing and wash before reuse. Absorb spillage to prevent material damage.

Storage Store in corrosive resistant container with a resistant inner liner.

Disposal Dispose of contents/container to an approved waste disposal plant.

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Section 3 Hazardous Ingredients / Identity Information

Hazardous Components	CAS No.	%
Ferric Chloride	7705-08-0	20–40
Hydrochloric Acid	7647-01-0	<1
Organic Acids	NA	<1
Copper	7440-50-8	<5

Section 4 First Aid Measures

In all cases, call a physician immediately.

Inhalation If breathed in, move person into fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen.

Skin Contact Wash off with soap and plenty of water.

Eye Contact Immediately flush eyes with large amounts of water for at least 15 minutes. Continue rinsing eyes during transport to hospital.

Ingestion Do **not** induce vomiting. Rinse mouth with water. Never give anything by mouth to an unconscious person.

Acute and Delayed Symptoms The most important known symptoms and effects are described in Section 2 and/or Section 11.

Section 5 Firefighting Measures

Extinguishing Media Use water spray, alcohol-resistant foam, dry chemical, or carbon dioxide

Flammable/Combustible Properties Hydrogen Chloride gas

Firefighting Equipment/Instructions Wear self-contained breathing apparatus for firefighting, if necessary

Section 6 Accidental Release Measures

Personal Precautions Wear respiratory protection. Avoid dust formation. Avoid breathing vapors, mist or gas. Evacuate personnel to safe areas. Avoid breathing dust. For personal protection, see Section 8.

Environmental Precautions Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Do not discharge into the environment.

Methods for Cleaning Up Soak up with inert absorbent material and dispose as hazardous waste. Keep in suitable, closed containers for disposal.

Section 7 Handling and Storage

Handling Precautions Avoid contact with skin and eyes. Avoid inhalation of vapor or mist.

Storage Requirements Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage.

Section 8 Component Exposure Limits

Control Parameters

Hazardous Components	CAS No.	%	OSHA (PEL/TWA)	ACGIH TLV
Ferric Chloride	7705-08-0	20–40	1 mg/m^3	1 mg/m^3
Hydrochloric Acid	7647-01-0	<1	5 ppm (ceiling)	5 ppm (ceiling)

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Section 8 Component Exposure Limits, continued

Appropriate Engineering Controls	Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.
Eye/Face Protection	Wear face shield and safety glasses
Skin Protection	Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.
Personal Protection	Wear complete body suit protecting against chemicals. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.
Respiratory Protection	Where risk assessment shows air-purifying respirators are appropriate, use a full-face particle respirator type N100 (US) or type P3 (EN 143) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator.
Control of Environmental Exposure	Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Do not discharge into the environment.

Section 9 Physical and Chemical Properties

Appearance/Odor	Green Liquid	**Odor Threshold**	No data
pH	<2	**Freezing Point**	6–28° F (-14 – -2° C)
Boiling Point Range	225–280° F° (107–138° C)	**Solubility (H_2O)**	No data
Specific Gravity	(Water = 1) 1.25 to 1.41	**Density**	68 lbs/ft^3 at 68°F (20°C)
Octanol/H_2O Coefficient	No data	**Evaporation Rate**	>1
Molecular Weight	No data	**Decomposition Temperature**	No data
Auto Ignition	No data	**Lower Flammability Limit**	No data
Flash Point	No data	**Upper Flammability Limit**	No data
Vapor Density	No data	**Vapor Pressure**	No data
VOC	No data	**Flammability Class**	No data
Viscosity	No data		

Section 10 Chemical Stability and Reactivity

Reactivity	No data available
Chemical Stability	Stable under recommended storage conditions
Possibility of Hazardous Reactions	No data available
Conditions to Avoid	No data available
Incompatibility	Strong oxidizing agents, Potassium, Alkali metals, Allyl Chloride, Ethylene Oxide, Styrene and bases
Hazardous Decomposition/ By-Products	Decomposes above 392° F (200° C). This produces toxic and corrosive gases including chlorine and hydrogen chloride. Decomposes on contact with water. This produces hydrogen chloride.

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Section 11 Toxicological Information

Acute Toxicity

Acute Oral LD50 Mouse – 1,300 mg/kg

Acute Inhalation No data available

Acute Dermal LD50 Rabbit – >2,000 mg/kg (OECD test guideline 402)

Skin Corrosion/Irritation Rabbit Result: Irritating to skin

Serious Eye Damage/Eye Irritation Rabbit Result: Severe eye irritation

Respiratory/Skin Sensitization No data available

Germ Cell Mutagenicity No data available

Carcinogenicity No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC, ACGIH, NTP or OSHA.

Reproductive Toxicity No data available

Specific Target Organ Effects The substance or mixture is classified as specific target organ toxicant, single exposure, category 3 with respiratory tract irritation.

Aspiration Hazard No data available

Section 12 Ecological Information

Ecotoxicity

Toxicity to Fish

Component	Species	Exposure Time	LC50/EC50/IC50
Ferric Chloride (7705-08-0)	*Pimephales promelas* (fathead minnow) *Daphnia magna* (water flea)	96 hrs 48 hrs	LC50 21.84 mg/l EC50 9.6 mg/l

Persistence/Degradability No data available

Bioaccumulative Potential No data available

Mobility in Soil No data available

Results of PBT and vPvB Assessment PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

Other Adverse Effects An environmental hazard cannot be excluded in the event of unprofessional handling or disposal. Toxic to aquatic life.

Section 13 Disposal Considerations

Waste Treatment Methods Dispose in accordance with federal, state, provincial, and local regulations. Regulations may also apply to empty containers. The responsibility for proper waste disposal lies with the owner of the waste.

Packaging Disposal Instructions Dispose as an unused product

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Section 14 Transportation Information

DOT (US)	
UN number	2582
Class	8
Packing group	III
Proper shipping name	Ferric Chloride, Solution
Reportable Quantity (RQ)	1,000 lbs
Poison Inhalation Hazard	No

IMDG	
UN number	2582
Class	8
Packing group	III
EMS-No	F-A, S-B
Proper shipping name	Ferric Chloride, Solution
Marine pollutant	Yes

IATA	
UN number	2582
Class	8
Packing group	III
Proper shipping name	Ferric Chloride, Solution

Section 15 Regulatory Information

U.S. TSCA - Inventory Status All ingredients of this product are listed or are excluded from listing on the U.S. Toxic Substances Control Act (TSCA) Chemical Substance Inventory.

Canada DSL Inventory Status All ingredients of this product are listed or are excluded from listing on the Domestic Substances List (DSL), the Non-Domestic Substances List (NDSL) or exempt.

CERCLA/SARA Section 302 Ferric Chloride, solution – 1,000 lbs; Hydrochloric Acid – 5,000 lbs

SARA 311/312 Hazards Immediate (acute) and long-term (chronic) health hazard

CERCLA/SARA Section 313 Not listed

	Right To Know Components	CAS-No	Revision Date
Pennsylvania	Ferric Chloride	7705-08-0	1993-04-24
New Jersey	Ferric Chloride	7705-08-0	1993-04-24
Massachusetts	Ferric Chloride	7705-08-0	1993-04-24

California Prop 65 This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

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Section 16 Other Information

UEI Systems® provides the information contained herein in good faith. It is believed to be correct. However it is not all-inclusive and should be used only as a guide. Individuals receiving this information must exercise their independent judgement in determining its appropriateness for a particular purpose. UEI Systems shall not be held liable for any damage resulting from handling or from contact with this product. All information appearing herein is based upon data obtained from the manufacturer and/or recognized technical sources.

Abbreviations

PEL Permissible Exposure Limit
TLV Threshold Limit Value

End Notes

1. SARA - Signed into law in 1986, the Superfund Amendments and Reauthorization Act (SARA) is an extension of CERCLA, and is intended to encourage and support local and state emergency planning efforts. SARA provides citizens and local governments with information about potential chemical hazards, and calls for facilities that store hazardous materials to provide officials and citizens with data on the type and amount on hand at specific locations. This field states whether a material is listed or not listed in section 372.65 of SARA. EHS - This states if a material is listed or not listed in Appendix B to part 355, the SARA Extremely Hazardous Substances (EHS) section. RQ is the reportable quantity. TPQ is the Threshold Planning Quantity.

2. RCRA - The Resource Conservation and Recovery Act enacted in 1976 and subsequently amended, controls solid-waste disposal and encourages recycling. This states whether a material is listed or not listed under this regulation. If listed the Hazardous Waste Number and waste characterization assigned by RCRA is also provided.

3. CERCLA - Enacted in 1980 and amended thereafter, the Comprehensive Environmental Response, Compensation, and Liability Act provides for identification and cleanup of hazardous materials released on land, into the air, waterways, and groundwater. It covers areas affected by newly released materials and older leaking or abandoned dump sites. This states whether a material is listed or not listed in CERCLA Table 302.4. If listed the section(s) that it is listed under and the Reportable Quantity (RQ) are also provided.

4. TSCA - The Toxic Substances Control Act controls the exposure to and use of raw industrial chemicals not subject to other laws. This states whether the chemical is listed or not listed under this regulation.

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