



Material Safety Data Sheet



HMIS

Health Hazard	3
Fire Hazard	3
Reactivity	0

PPE (See Section 15)



Section 1. Chemical Product and Company Identification

Trade Name **Iron Test** Part # RE2040, RE2015

Manufacturer Haztech Systems, Inc. CAS # 64-17-5 / 5144-89-8
 PO Box 929 RTECS KQ6300000 / SF8437000
 Mariposa, CA 95338 TSCA TSCA 8(b) inventory:
 Ethyl alcohol, 200 proof

Commercial Name 1,10-Phenanthroline monohydrate
 in ethanol

Synonyms CI #

In case of emergency contact CHEMTREC
 (24 hours) at 800-424-9300

HazTech Systems, Inc. 800-543-5487

Spectrum Chemical Mfg. Corp. 310-516-8000

Chemical Formula CH3CH2OH, C12H8N2.H2O

Supplier Spectrum Chemical Mfg. Corp.
 14422 S. San Pedro St.
 Gardena, CA 90248

Section 2. Composition and Information on Ingredients

Exposure Limits

Name	CAS #	TWA (mg/m3)	STEL	CEIL (mg/m3)	% by Weight
Ethyl alcohol 200 Proof	64-17-5 1	900			95%
1,10-Phenanthroline monohydrate	5144-89-8				5%

Toxicological Data on Ingredients Ethyl alcohol 200 Proof: ORAL (LD50): Acute: 7060 mg/kg (Rat). 3450 mg/kg (Mouse).
 VAPOR (LC50): Acute: 20000 ppm 8 hours (Rat). 39000 mg/m3 4 hours (Mouse).
 1,10-Phenanthroline monohydrate: ORAL (LD50): Acute: 132 mg/kg (Rat).

Section 3. Hazards Identification

Potential Acute Health Effects Very hazardous in case of ingestion. Hazardous in case of skin contact (irritant), of eye contact (irritant), of inhalation. Slightly hazardous in case of skin contact (permeator). Severe over-exposure can result in death.

Potential Chronic Health Effects CARCINOGENIC EFFECTS: Classified PROVEN by State of California Proposition 65. A4 (Not classifiable for human or animal.) by ACGIH.
 MUTAGENIC EFFECTS: Not available. TERATOGENIC EFFECTS: Classified PROVEN for human.
 DEVELOPMENTAL TOXICITY: Classified Reproductive system/toxin/female, Reproductive system/toxin/male, Development toxin [PROVEN]. The substance is toxic to blood, the reproductive system, liver, upper respiratory tract, skin, central nervous system (CNS).

Section 4. First Aid Measures

Eye Contact	Check for and remove any contact lenses. Immediately flush eyes with running water for at least 15 minutes, keeping eyelids open. Cold water may be used. Get medical attention.
Skin Contact	In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Cover the irritated skin with an emollient. Cold water may be used. Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention immediately.
Inhalation	If inhaled, 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 unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention immediately.

Section 5. Fire and Explosion Data

Flammability	Flammable.
Auto-Ignition Temperature	363°C (685.4°F) (Ethanol).
Flash Point	CLOSED CUP: 12.78°C (55°F). OPEN CUP: 12.78°C (55°F) (Cleveland)(Ethanol).
Flammable Limits	LOWER: 3.3% UPPER: 19% (Ethanol).
Products of Combustion	These products are carbon oxides (CO, CO ₂), nitrogen oxides (NO, NO ₂ ...).
Fire Hazards in Presence of Various Substances	Flammable in presence of open flames and sparks, of heat. Slightly flammable to flammable in presence of oxidizing materials.
Explosion Hazards in Presence of Various Substances	Risks of explosion of the product in presence of mechanical impact: Not available. Risks of explosion of the product in presence of static discharge: Not available. Explosive in presence of oxidizing materials.
Fire Fighting Media and Instructions	Flammable liquid, soluble or dispersed in water. SMALL FIRE: Use DRY chemical powder.
Special Remarks on Fire Hazards	CAUTION: MAY BURN WITH NEAR INVISIBLE FLAME Vapor may travel considerable distance to source of ignition and flash back.

Section 6. Accidental Release Measures

Small Spill	Dilute with water and mop up, or absorb with an inert dry material and place in an appropriate waste disposal container.
-------------	--

Section 7. Handling and Storage

Precautions	If ingested, seek medical advice immediately and show the container or the label. Avoid contact with skin and eyes
Storage	Keep in HazCat Kit.

Section 8. Exposure Controls/Personal Protection

Engineering Controls	Use in a well ventilated area.
Personal Protection	Gloves and goggles.

Section 9. Physical and Chemical Properties

Physical State and Appearance	Liquid	Volatility	Not available
Molecular Weight	Not available	Odor Threshold	100 ppm
pH (1% Solution in Water)	Not available	Water/Oil Dist. Coeff.	Not available
Boiling Point	78.5°C (173.3°F) (Ethanol).	Ionicity (in Water)	Not available
Melting Point	-114.1°C (-173.4°F) (Ethanol).	Dispersion Properties	Not available
Critical Temperature	Not available	Solubility	Easily soluble in water. Soluble in methanol, diethyl ether, acetone.
Specific Gravity	0.789 (Water = 1) (Ethanol).	Odor	Mild to strong, rather pleasant; like wine or whiskey. Alcohol-like.
Vapor Pressure	5.7 kPa (@ 20°C) (Ethanol).	Taste	Pungent. Burning.
Vapor Density	1.59 (Air = 1) (Ethanol).	Color	Colorless, clear.

Section 10. Stability and Reactivity Data

Stability	Product is stable.	Corrosivity	Non-corrosive in presence of glass.
Instability Temperature	Not available.	Special Remarks on Corrosivity	Not available.
Conditions of Instability	Reactive with oxidizing agents, acids, alkalis, moisture.	Polymerization	Will not polymerize.
Incompatibility with Various Substances	Ethanol rapidly absorbs moisture from the air. Can react vigorously with oxidizers.		

Section 11. Toxicological Information

Route of Entry	Eye contact. Inhalation. Ingestion.
Toxicity to Animals	Ethanol: Acute oral toxicity (LD50): 3450 mg/kg (Mouse). Acute toxicity of the vapor (LC50): 39000 mg/m ³ 4 hours (Mouse). 1,10-phenanthroline: Acute oral toxicity (LD50): 132 mg/kg (Rat).
Chronic Effects on Humans	CARCINOGENIC EFFECTS: Classified PROVEN by State of California Proposition 65. A4 (Not classifiable for human or animal.) by ACGIH. TERATOGENIC EFFECTS: Classified PROVEN for human. DEVELOPMENTAL TOXICITY: Classified Reproductive system/toxin/female, Reproductive system/toxin/male, Development toxin [PROVEN]. Causes damage to the following organs: blood, the reproductive system, liver, upper respiratory tract, skin, central nervous system (CNS), mucous membranes.
Other Toxic Effects on Humans	May affect genetic material. Causes adverse reproductive effects and birth defects, based on moderate to heavy consumption. May cause cancer based on animal data
Special Remarks on Toxicity to Animals	Animal embryotoxic.
Special Remarks on Chronic Effects on Humans	Not available.
Special Remarks on Other Toxic Effects on Humans	Not available.

Section 12. Ecological Information

Ecotoxicity	Ecotoxicity in water (LC50): 14000 mg/l 96 hours [Rainbow trout].
BOD5 and COD	Not available.
Products of Biodegradation	Possibly hazardous short term degradation products are not likely. However, long term degradation products may arise.
Toxicity of the Products of Biodegradation	The products of degradation are more toxic.
Special Remarks on the Products of Biodegradation	Not available.

Section 13. Disposal Considerations

Waste Disposal Recycle to process, if possible. Consult your local or regional authorities.

Section 14. Transport Information

DOT Classification CLASS 3: Flammable liquid.

Identification Flammable liquids, nos, (Ethanol), 3, UN1993, II

Special Provisions for Transport Not applicable.

Section 15. Other Regulatory Information and Pictograms

Federal and State Regulations Rhode Island RTK hazardous substances: Ethyl alcohol 200 Proof
 Pennsylvania RTK: Ethyl alcohol 200 Proof
 Florida: Ethyl alcohol 200 Proof
 Massachusetts RTK: Ethyl alcohol 200 Proof
 New Jersey: Ethyl alcohol 200 Proof
 Tennessee: Ethyl alcohol 200 Proof
 California - Directors List of Hazardous Substances (8 CCR 339): Ethyl alcohol 200 Proof
 TSCA 8(b) inventory: Ethyl alcohol 200 Proof

California Proposition 65 Warnings California prop. 65: This product contains the following ingredients for which the State of California has found to cause cancer which would require a warning under the statute: Ethyl alcohol 200 Proof
 California prop. 65: This product contains the following ingredients for which the State of California has found to cause birth defects which would require a warning under the statute: Ethyl alcohol 200 Proof

Other Regulation OSHA: Hazardous by definition of Hazard Communication Standard (29 CFR 1910.1200).
 EINECS: This product is on the European Inventory of Existing Commercial Chemical Substances.

Other classifications WHMIS (Canada) CLASS B-2: Flammable liquid with a flash point lower than 37.8°C (100°F).
 CLASS D-2A: Material causing other toxic effects (VERY TOXIC).
 CLASS D-1B: Material causing immediate and serious toxic effects (TOXIC).
 CLASS D-2A: Material causing other toxic effects (VERY TOXIC).

DSCL (EEC) R11- Highly flammable. S7- Keep container tightly closed. S16- Keep away from sources of ignition - No smoking. R25- Toxic if swallowed. R36/38- Irritating to eyes and skin.

Section 16. Other Information

Part Number(s) RE2040, RE2015

References Not available.

Other Special Considerations Not available.

Validated by R. Houghton 5/13/02

Verified by R. Turkington

Call 1-800-543-5487

Notice to Reader

All chemicals may pose unknown hazards and should be used with caution. This Material Safety Data Sheet (MSDS) applies only to the material as packaged. If this product is combined with other materials, deteriorates, or becomes contaminated, it may pose hazards not mentioned in this MSDS. It shall be the user's responsibility to develop proper methods of handling and personal protection based on the actual conditions of use. While this MSDS is based on technical data judged to be reliable, Haztech Systems, Inc. assumes no responsibility for the completeness or accuracy of the information contained herein.