

**Section 1: CHEMICAL PRODUCT AND COMPANY IDENTIFICATION**

Product Name: ASTM E407 Kallings Etchant(s) 94, 95  
Part Number: ASTM94 or ASTM95 (all sizes)  
Relevant Use: Industrial use / Metal testing reagent  
Manufacturer: Sturbridge Metallurgical Services Inc.  
City, State, Zip: Sturbridge MA 01566  
Phone Number: 508-347-5288  
Emergency Phone: **CHEMTREC 1-800-424-9300**

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**Section 2: Hazard(s) Identification**

**Hazardous classification of the substance or mixture:**

Hazard Class	Category code
Flammable Liquid	2
Skin Corrosion	1A
Serious Eye Damage	1
Acute toxicity (oral)	4
Acute toxicity (inhalation)	3
Specific Target Organ Toxicity-Single Exposure	3
Acute aquatic toxicity	1
Chronic aquatic toxicity	2

**Pictogram:**



**Signal word:** Danger

**Hazard Statements:**

H225-Highly flammable liquid and vapor.  
H314- Causes severe skin burns and eye damage.  
H301+H331-Toxic if swallowed or inhaled  
H302-Harmful if swallowed  
H410-Very toxic to aquatic life with long lasting effects.

**Precautionary Statements:**

P210- Keep away from heat/sparks/open flames/hot surfaces. No smoking  
P261-Avoid breathing dust/fume/gas/mist/vapors/spray.  
P280- Wear protective gloves/ protective clothing/ eye protection/ face protection.

**Response Statements:**

P303 + P361 + P353- IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.  
P305 + P351 + P338- IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
P301 + P330 + P331+P310- If SWALLOWED: Rinse mouth. Do NOT induce vomiting. Immediately call a POISON CENTER or doctor/physician.

**Storage Statement:**

P403+P233+P235-Store in a well-ventilated place. Keep container tightly closed. Keep cool.  
P405-Store locked up.

**Disposal statement:**

P501-Dispose of contents in accordance with local, state, federal and international regulations.

**Other hazards:** No information

**HMIS Ratings:**

Health: 3  
Flammability: 3  
Reactivity: 0

**NFPA Ratings:**

Health: 3  
Flammability: 3  
Reactivity: 0  
Special Hazard: None

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**Section 3: Composition/Information on Ingredients**

Chemical Name	CAS No.	% Concentration
Ethanol (Ethyl Alcohol)	64-17-5	33-50
Cupric chloride, dihydrate	10125-13-0	~ 2
Hydrochloric Acid	7647-01-0	33-50
*Water (Used in ASTM#95 Only)	7732-18-5	0-33

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**Section 4: First-Aid Measures**

**First-aid measures general**

Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area

**First-aid measures after eye contact**

Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Get medical aid immediately.

**First-aid measures after inhalation**

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

**First-aid measures after skin contact**

Wash the areas of contact with water for at least 15 minutes while removing contaminated clothing and shoes. Get medical aid immediately.

**First-aid measures after ingestion**

Do not induce vomiting. Rinse mouth. Get medical aid immediately.

**Most important symptoms and effects, both acute and delayed:** Monitor the blood alcohol level if swallowed.

**Recommendation for immediate medical care and special treatment needed, when necessary:** No information.

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### Section 5: Fire-Fighting Measures

**Extinguishing media:** Dry chemical, foam, or carbon dioxide. Water may be ineffective.

**Special hazards arising from the substance or mixture:** In case of fire, the following can be released: acidic liquid, carbon monoxide and carbon dioxide.

**Special protective equipment or precautions for firefighters:** Wear full protective clothing and self-contained respirator.

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### Section 6: Accidental Release Measures

#### Personal Precautions, Protective Equipment and Emergency Procedures

Wear protective equipment. Keep unprotected persons away. Ensure adequate ventilation. Keep away from ignition sources.

#### Environmental precautions

Do not allow the material to be released to the environment without proper government permits.

#### Methods and materials for containment and cleaning up

Use neutralizing agent. Absorb with liquid binding material (sand, diatomite, acid binder, universal binders, saw dust). Dispose contaminated material as waste according to section 13. Ensure adequate ventilation. Keep away from ignition sources.

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### Section 7: Handling and Storage

#### Precautions for safe handling

Keep container tightly sealed. Store in cool, dry place in tightly closed containers. Ensure good ventilation at the workplace. Open and handle container with care. Protect against electrostatic charges. Fume can combine with air to form an explosive mixture.

#### Conditions for safe storage, including any incompatibilities

Keep container tightly sealed. Store in an approved flammable liquid storage container/area.

**Incompatibilities:** Store away from oxidizing agents, strong bases.

**Specific storage requirement(s):** No information.

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### Section 8: Exposure Controls/Personal Protection Exposure Limits

Component	CAS No.	ACGIH TLV	OSHA PEL
Ethanol (Ethyl Alcohol)	64-17-5	1000 ppm	1000 ppm
Cupric chloride, dihydrate	10125-13-0	1 mg/m <sup>3</sup> dust 0.2 mg/m <sup>3</sup> fume	0.1mg/m <sup>3</sup>
Hydrochloric acid	7647-01-0	C 5 ppm	C 5 ppm
Water		NA	NA

**Engineering controls:** Use general and/or local exhaust ventilation to control the vapor concentration.

**Eye protection:** Wear safety glasses or goggles.

**Skin protection:** Wear protective clothing and chemical resistant gloves.

**Respiratory protection:** Use self-contained respiratory device in emergency situation.

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### Section 9: Physical and Chemical Properties

**Physical state:** Liquid  
**Appearance:** Dark green liquid  
**Color:** green  
**Odor:** Acidic, alcohol-like  
**Odor Threshold:** Not determined  
**Vapor pressure:** Not determined  
**pH:** Not determined  
**Relative density:** Not determined  
**Melting Point / Freezing Point:** Not determined  
**Water Solubility:** miscible  
**Boiling Point:** Not determined  
**Flash Point:** Not determined  
**Relative evaporation rate:** Not determined  
**Flammability (solid, gas):** Not determined  
**Auto-ignition temperature:** Not determined  
**Decomposition temperature:** Not determined  
**Viscosity:** Not determined

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### Section 10: Stability and Reactivity

**Reactivity:** No information.  
**Chemical stability:** Stable under recommended conditions.  
**Stabilizer(s):** Not required.  
**Safety issues that may arise should the product change in appearance:** No information.  
**Thermal decomposition/ conditions to Avoid:** Decomposition will not occur if used and stored according to specifications. Avoid excessive heat.  
**Possibility of hazardous reactions:** see incompatibilities.  
**Incompatibilities:** Strong oxidizers, strong bases, heat, sparks, open flame.  
**Hazardous decomposition products:** oxides of carbon, when heated to decomposition.

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### Section 11: Toxicological Information:

#### For Ethanol (Ethyl alcohol):

##### Acute toxicity:

Oral human LDLo: 1400 mg/kg BWT  
Inhalation rate LD50: 20000 ppm/10H

##### Other exposure effect:

On the Skin: May cause irritation.  
On the Eye: May cause irritation.  
Sensitization: No sensitizing effects known.

**Additional toxicological information:** To the best of our knowledge the acute and chronic toxicity of this substance is not fully known. Danger through skin absorption. No classification data on carcinogenic properties of this material is available from NTP, IARC or OSHA.

**For Hydrochloric Acid:**

**Acute toxicity:**

Oral rat LD50: 900 mg/kg.

**Other exposure effect:**

Inhalation: Strong corrosive effect.

On the Skin: Strong corrosive effect.

On the Eye: Strong corrosive effect.

Sensitization: No sensitizing effects known

**Additional toxicological information:** To the best of our knowledge the acute and chronic toxicity of this substance is not fully known. No classification data on carcinogenic properties of this material is available from NTP or OSHA. IARC-3 Not classifiable as to human carcinogenicity.

**For Cupric Chloride, dihydrate:**

**Acute toxicity:**

Oral rat LD50: 336 mg/kg.

Dermal rat (male) LD50: 2000 mg/kg

Dermal rat (female) LD50: 1224 MG/kg

**Other exposure effect:**

Inhalation: No data

On the Skin: Strong corrosive effect.

On the Eye: Strong corrosive effect.

Sensitization: No sensitizing effects known

**Additional toxicological information:** To the best of our knowledge the acute and chronic toxicity of this substance is not fully known. No classification data on carcinogenic properties of this material is available from NTP, IARC or OSHA.

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**Section 12: Ecological Information**

**Toxicity**

**Aquatic toxicity:** Cupric chloride is very toxic to aquatic organisms.

**Persistence and degradability:** Cupric chloride may cause long lasting harmful effects to aquatic life.

**Behavior in environmental system:**

**Bioaccumulative potential:** Cupric chloride is expected to significantly bioaccumulate.

**Mobility in soil:** No information.

**Additional ecological information:** Avoid transfer into the environment.

**Other adverse effects:** No information.

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**Section 13: Disposal Considerations**

Place in a chemical waste container for proper disposal in an approved waste disposal facility. Dispose of the content and container in accordance with local, regional, national, international regulations.

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**Section 14: Transportation Information**

**Department of Transportation (DOT, United States of America)**

Flammable liquid, corrosive, n.o.s., (ethanol, hydrochloric acid)

UN number: 2924

Hazard Class: 3, 8

Packing Group: II

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**Section 15: Regulatory Information**

**Not meant to be all inclusive, selected regulation represented OSHA status:** These items meet the OSHA Hazard Communication Standard (29 CFR 1910.1200) definition of a hazardous material.

**TSCA status:** All components are listed.

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**Section 16: Other Information**

**Disclaimer:** The information above is believed to be accurate and represents the best information currently available to us. SMS, Inc. makes no warranty, express or implied, as to its accuracy, and we assumes no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. We shall not be liable for any damages to person or property resulting from its use.