

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

Product Name: ASTM #80 Vilella's Etchant  
Part Number: ETCH-ASTM80 (all sizes)  
Relevant Use: Laboratory Chemicals  
Manufacturer: Sturbridge Metallurgical Services Inc.  
City, State, Zip: Sturbridge MA 01566  
Phone Number: 508-347-5288  
Emergency Phone: **CHEMTREC 1-800-424-9300**

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

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

| Hazard Class                                    | Category code |
|---|---------------|
| Flammable Liquid                                | 2             |
| Corrosive to Metals                             | 1             |
| Acute toxicity (oral)                           | 4             |
| Skin Corrosion                                  | 1B            |
| Skin sensitization                              | 1             |
| Serious eye damage                              | 1             |
| Specific Target Organ Toxicity –Single Exposure | 3             |

**Pictogram:**



**Signal word:** Danger

**Hazard Statements:**

H225- Highly flammable liquid and vapor  
H290- May be corrosive to metals  
H302-Harmful if swallowed  
H314-Causes severe skin burns and eye damage  
H317- May cause allergic skin reaction.  
H318-Causes serious eye damage  
H335-May cause respiratory irritation  
H370-Causes damage to organs.

**Precautionary Statements:**

Preventions:  
P210-Keep away from heat/sparks/open flames/hot surfaces. — No smoking.  
P233- Keep container tightly closed.  
P234- Keep only in original container.  
P240- Ground/bond container and receiving equipment.  
P241- Use explosion-proof electrical/ventilating/lighting/equipment.  
P242- Use only non-sparking tools.  
P243- Take precautionary measures against static discharge.  
P260- Do not breathe dust/fume/gas/mist/vapors/spray.  
P261-Avoid breathing dust/fume/gas/mist/vapors/spray.  
P264- Wash skin thoroughly after handling.

P270- Do not eat, drink or smoke when using this product.  
P271-Use only outdoors or in a well-ventilated area.  
P272-Contaminated work clothing should not be allowed out of the workplace.  
P280- Wear protective gloves/protective clothing/eye protection/face protection

**Response Statements:**

P301+312- IF SWALLOWED: call a POISON CENTER or doctor/physician IF you feel unwell.  
P301+P330+P331- IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.  
P302 + P352- IF ON SKIN: wash with plenty of soap and water.  
P303+ P361+P353- IF ON SKIN (or hair): Remove/Take off Immediately all contaminated clothing. Rinse SKIN with water/shower.  
P304+P340-IF INHALED: Remove victim to fresh air and Keep at rest in a position comfortable for breathing.  
P305+P351+P338- IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
P307+P311- IF exposed: call a POISON CENTER or doctor/physician.  
P310- Immediately call a POISON CENTER or doctor/physician.  
P312-Call a POISON CENTER or doctor/physician if you feel unwell.  
P321- Specific treatment (see Section 4 SDS).  
P330- Rinse mouth.  
P333+P313-IF SKIN irritation or rash occurs: Get medical advice/attention.  
P363-Wash contaminated clothing before reuse.  
P370+P378- In case of fire: Use dry chemical, CO2 or appropriate foam for extinction.  
P390- Absorb spillage to prevent material damage

**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.

**Hazard(s) not otherwise classified:** None

**HMIS Ratings:**

Health: 2  
Flammability: 3  
Reactivity: 1

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

| Chemical Name              | CAS No.   | % Concentration |
|----------------------------|-----------|-----------------|
| Ethanol<br>(ethyl alcohol) | 64-17-5   | 90-95%          |
| Hydrochloric Acid          | 7646-01-0 | 2-5%            |
| Picric Acid                | 88-89-1   | 0.5-1.5%        |

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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 inhalation**

If breathed in, move person into fresh air. If not breathing, give artificial respiration. 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. Skin stains may be removed using reagent alcohol or dilute Ammonium Hydroxide Solution. Get medical aid immediately.

**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 ingestion**

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

**Most important symptoms and effects, both acute and delayed**

May stain skin

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**Section 5: Fire-Fighting Measures**

**Suitable extinguishing media**

Dry chemical, "alcohol foam", carbon dioxide, or water spray.

**Special hazards arising from the substance or mixture**

In case of fire, the following can be released: acidic liquid, carbon monoxide and carbon dioxide.

**Advice 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**

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**

Wipe clean the screw top of the container before sealing. Keep container tightly sealed. Store in cool, dry place in tightly closed containers. Ensure good ventilation at the workplace. Protect against electrostatic charges. Fume can combine with air to form an explosive mixture.

**Conditions for safe storage**

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

**Incompatibilities**

Store away from oxidizing agents, strong bases. Do not store on concrete floors (can form explosive calcium picrate). May react with

various substances, see Section 10.

**Specific storage requirement(s)**

Inspect the content periodically. Do not let it dry completely. Keep wetted with ethanol.

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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 STEL             | 1000 ppm TWA                   |
| Hydrochloric Acid       | 7647-01-0 | C 5 ppm                   | C 2 ppm                        |
| Picric Acid             | 88-89-1   | 0.1 mg/m <sup>3</sup> TWA | 0.1 mg/m <sup>3</sup> TWA skin |

**Personal protective equipment**

**Eye/face 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.

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

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**Section 9: Physical and Chemical Properties**

**Physical state:** Liquid

**Appearance:** Form: liquid, yellow

**Color:** yellow

**Odor:** alcohol like

**Solubility:** Miscible in water.

**Specific Gravity:** 0.79-1.2

**pH:** No information found.

**% Volatiles by volume @ 21C (70F):** > 90%

**Boiling Point:** PICRIC Acid Explodes above 300C (572F). ETHANOL 78C (172F)

**Melting Point:** PICRIC ACID 122C (252F) ETHANOL -114C (-173F)

**Vapor Density (Air=1):** 1.6 (ethanol)

**Vapor Pressure (mm Hg):** 40 @ 19C (66F) (ethanol)

**Evaporation Rate (BuAc=1):** ca. 1.4 (CCl<sub>4</sub>=1) (ethanol)

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**Section 10: Stability and Reactivity**

**Chemical stability:** Dangerous explosion hazard when dry. Becomes increasingly shock, heat and friction sensitive as it loses its moisture. Explosive decomposition is likely if material is involved in a fire.

**Hazardous decomposition products:** oxides of carbon, when heated to decomposition.

**Hazardous Polymerization:** Will not occur.

**Thermal decomposition/ conditions to Avoid:** Excessive heat, incompatible materials, ignition sources, dryness.

**Possibility of hazardous reactions:** see incompatibilities.

**Incompatibilities:** Strong bases and oxidizers. Picric acid will react with metals including copper, lead, zinc, and aluminum; ammonia, concrete, plaster, salts, gelatin, silver salts, alkali metals, and many other materials to form dangerously sensitive salts.

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**Section 11: Toxicological Information:**

**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 Picric Acid:**

**Acute toxicity:** Oral rat LD50: 200mg/kg.

**Other exposure effect:**

**Inhalation:** May cause irritation.

**On the Skin:** May stain skin and cause irritation.

**On the Eye:** May cause irritation.

**Sensitization:** May cause allergic skin reaction.

**Additional toxicological information:** To the best of our knowledge the acute and chronic toxicity of this substance is not fully known. May be absorbed through skin. 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**

**Ecology – water:** No data available

**Persistence and degradability:** No data available

**Behavior in environmental system:**

**Bioaccumulative potential:** No information.

**Mobility in soil:** No information.

**Additional ecological information:** No information.

**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**

**D.O.T. shipping name:** Flammable liquid, Corrosive n.o.s., (Ethanol, hydrochloric acid)

**D.O.T. hazard class:** 3, 8

**UN number:** UN2924

**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.