IMPORTANT: Read this MSDS before handling and disposing of this product and pass this information on to employees, customers and users of this product.

PRODUCT DESCRIPTION: AE #123 ETCHING SOLUTION

PREPARATION DATE: 3/03/97 - Rev. 4

SECTION I - GENERAL INFORMATION

TRADE NAME: PANNIER “MASTER MARKER”
GENERIC NAME: Etching Solution
CHEMICAL FAMILY: Mixture
CAS NO.: NOT AVAILABLE (MIXTURE)
DOT HAZARDOUS MATERIALS PROPER SHIPPING NAME: Corrosive Liquid, N.O.S.
DOT HAZARD CLASS: Corrosive Material
UN/NA ID NO.: UN 1760
HMIS CODES: 3H, 0F, 0R

SECTION II - HAZARDOUS INGREDIENTS

<table>
<thead>
<tr>
<th>COMPONENTS</th>
<th>CAS NUMBER</th>
<th>OSHA PEL</th>
<th>ACGIH TLV</th>
<th>SEC.VI</th>
<th>MM HG @ TEMP</th>
<th>WEIGHT PERCENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>* Hydrochloric Acid 20BE</td>
<td>7647-01-0</td>
<td>5 PPM CEIL</td>
<td>5 PPM CEIL</td>
<td>X</td>
<td>30.0</td>
<td>77°F</td>
</tr>
<tr>
<td>Bismuth Trichloride 99%</td>
<td>7787-60-2</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>* Antimony Trichloride</td>
<td>10025-91-9</td>
<td>.5 MG/M3</td>
<td>.5 MG/M3</td>
<td>X</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>* Mercuric Chloride</td>
<td>7487-94-7</td>
<td>.05 MG/M3</td>
<td>.05 MG/M3</td>
<td>X</td>
<td>0.0</td>
<td>68°F</td>
</tr>
</tbody>
</table>

*INDICATES TOXIC CHEMICAL(S) SUBJECT TO THE REPORTING REQUIREMENTS OF SECTION 313 OF TITLE III AND OF 40 CFR 372.

SECTION III - PHYSICAL DATA

BOILING RANGE: 122 to 212°F
SPECIFIC GRAVITY (H2O=1): 1.4
VAPOR DENSITY: Heavier than Air
EVAPORATION RATE: Slower than Ether
MATERIAL V.O.C.: 0.00 LB/GL (0 G/L)
SOLUBILITY IN WATER: Partially Soluble
APPEARANCE AND ODOR: Thin Yellowish Liquid, Pungent Odor

SECTION IV - FIRE AND EXPLOSION HAZARD DATA

FLASH POINT: NONE
METHOD USED: N/A
FLAMMABLE LIMITS IN AIR BY VOLUME: LOWER: N/A  UPPER: N/A
EXTINGUISHING MEDIA: None Known
SPECIAL FIREFIGHTING PROCEDURES: Water may be used to cool closed containers to prevent explosion when exposed to extreme heat. Full protective equipment may be needed to protect firefighters from hazardous combustion products.
UNUSUAL FIRE AND EXPLOSION HAZARDS: During emergency conditions, overexposure to decomposition products may cause a health hazard.

SECTION V - REACTIVITY DATA

STABILITY: Stable
CONDITIONS TO AVOID: Acid reacts with many metals to produce hydrogen gas which is a serious fire and explosive hazard.
INCOMPATIBILITY (MATERIALS TO AVOID): Contact with metals, alkalis, amines and oxidizers may liberate toxic gases.
HAZARDOUS DECOMPOSITION OR BYPRODUCTS: Hydrogen chloride evolution is accelerated by heating. May produce antimony and mercury fumes.
HAZARDOUS POLYMERIZATION: Will not occur.
SECTION VI - HEALTH HAZARD DATA

INHALATION HEALTH RISKS AND SYMPTOMS OF EXPOSURE: TLV 5 PPM ceiling, value from ACGIH. Marked irritation of nose and throat, dizziness, headache. Can produce severe burns, and lung edema.

SKIN AND EYE CONTACT HEALTH RISKS AND SYMPTOMS OF EXPOSURE: SKIN: Contact may cause severe burns. EYES: May cause corneal injury.

SKIN ABSORPTION HEALTH RISKS AND SYMPTOMS OF EXPOSURE: Dermatitis may result from repeated contact. Prolonged contact will cause severe pain and brownish or yellow stains.

INGESTION HEALTH RISKS AND SYMPTOMS OF EXPOSURE: Can cause severe burning or the mouth followed by vomiting.

HEALTH HAZARDS (ACUTE AND CHRONIC): ACUTE: Severe irritation of eyes, nose, throat and skin. High concentrations may cause acute lung damage/edema. CHRONIC: Excessive exposure may cause cumulative long-term organ toxicity other than nervous, respiratory, hematological, or reproductive.

CARCINOGENICITY: NTP? No IARC MONOGRAPHS? No OSHA REGULATED? No

*Mercantile and aniline are suspect carcinogens.

MEDICAL CONDITIONS GENERALLY AGGRAVATED BY EXPOSURE: Dermatitis and respiratory irritation.

EMERGENCY AND FIRST AID PROCEDURES: INHALATION: Remove to fresh air. Restore breathing. Treat symptoms. Consult a physician. EYES: Flush immediately with water for 15 minutes. See a physician. SKIN: Wash with soap and water. Remove contaminated clothing. Consult a physician if irritation persists. INGESTION: Drink water to dilute. DO NOT induce vomiting. Consult a physician or poison control center immediately.

SECTION VII - PRECAUTIONS FOR SAFE HANDLING AND USE

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED: Ventilate area. Avoid breathing vapors. Carefully neutralize with alkali, such as soda ash or lime. Remove by suitable inert absorbing material.

WASTE DISPOSAL METHOD: In compliance with local, state and federal regulations. Refer to MSDS caution information before attempting to cleanup.

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING: Keep containers closed when not in use. Avoid inhalation of vapor or mist.

OTHER PRECAUTIONS: In accordance with good industrial practice, handle with care and avoid contact. Use only with adequate ventilation. Wash thoroughly after handling. For industrial use only. HMIS personal protective equipment is dependent upon conditions of use.

SECTION VIII - CONTROL MEASURES

RESPIRATORY PROTECTION: When used with adequate ventilation none normally required. However, when required its use must be in compliance with all OSHA health and fit testing requirements, as given in 29CFR 1910.134. Do NOT spray! Will produce toxic vapors.

VENTILATION: Sufficient volume and pattern should be provided to keep air contaminant concentrations below current ACGIH TLV limits.

PROTECTIVE GLOVES: Protective gloves should be worn if contact is likely. Use rubber or plastic.

EYE PROTECTION: Safety eye-wear is recommended and should be available to avoid accidental contact.

OTHER PROTECTIVE CLOTHING OR EQUIPMENT: If using large amounts (gallons), use safety glasses, acid resistant gloves and apron.

WORK/HYGIENIC PRACTICES: Wash hands before eating, drinking or smoking. Avoid smoking in work area.

SECTION IX - SPECIAL PRECAUTIONS

NO OTHER DATA AVAILABLE

SECTION X - REGULATORY INFORMATION

SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT OF 1986 (SARA) TITLE III TOXIC CHEMICAL(S) SUBJECT TO THE REPORTING REQUIREMENTS OF SECTION 313 OF TITLE III AND OF 40 CFR 372.

CAS NUMBER
Mercuric Chloride 7487-94-7
Antimony Trichloride 10025-91-9
Hydrochloric Acid 20BE 7647-01-0

DISCLAIMER OF LIABILITY

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