

# Material Safety Data Sheet

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## Section I

**Identity ( As used on Label and List)**  
**ALUMINUM ETCHANT TYPE A**  
**AlSi ETCHANT**  
**PAN ETCH 10**  
**PAN ETCH 11**

Emergency # Chemtrec 1-800-424-9300

Revised: 4-04

## Section II - Hazardous Ingredients / Identity Information

| Hazardous Components ( Specific Chemical Identity; Common Name(s))     | OSHA PEL | ACGIH TLV                            | Other Limits Recommended | % (option) |
|------------------------------------------------------------------------|----------|--------------------------------------|--------------------------|------------|
| PHOSPHORIC ACID H <sub>3</sub> PO <sub>4</sub> CAS # 7664-38-2         |          |                                      | 1.0 mg/M <sup>3</sup>    | 40-80%     |
| NITRIC ACID HNO <sub>3</sub> CAS# 7697-37-2                            |          | ACGTH TLV: 2ppm (TWA)<br>4ppm (STEL) | 2ppm                     | 1-5%       |
| ACETIC ACID C <sub>2</sub> H <sub>4</sub> O <sub>2</sub> CAS # 64-19-7 |          |                                      | 10 ppm                   | 3-20%      |

BALANCE DISTILLED WATER - NON HAZARDOUS  
ONE OF THE INGREDIENTS IN THIS PRODUCTS ARE SUSPECTED CARCINOGENS.

## Section III - Physical / Chemical Characteristics

|                             |                                           |                                          |      |
|-----------------------------|-------------------------------------------|------------------------------------------|------|
| Boiling Point               | 100°C                                     | Specific Gravity ( H <sub>2</sub> O = 1) | 1.45 |
| Vapor Pressure (mm Hg.)     | N/A                                       | Melting Point                            | N/A  |
| Vapor Density (AIR = 1)     | N/A                                       | Evaporation Rate<br>(Butyl Acetate = 1)  | N/A  |
| Solubility in Water at 20°C | Miscible +                                |                                          |      |
| Appearance and Odor         | CLEAR, COLORLESS, SYRUPY LIQUID, ODORLESS |                                          |      |

## Section IV - Fire and Explosion Hazard Data

|                           |                  |       |       |
|---------------------------|------------------|-------|-------|
| Flash Point (Method Used) | Flammable Limits | LEL   | UEL   |
| NON-FLAMMABLE             | NOT APPLICABLE   | ----- | ----- |

Extinguishing Media WATER SPRAY, DRY CHEMICAL, OR FOAM. CONTACT WITH COMMON METALS PRODUCES HYDROGEN (H<sub>2</sub>) WHICH MAY FORM FLAMMABLE MIXTURES WITH AIR UNDER CONDITIONS OF FIRE, TOXIC VAPORS MAY FORM, CORROSIVE LIQUID

Special Fire Fighting Procedures WEAR SELF-CONTAINED BREATHING APPARATUS DURING THE FIRE AND PROTECT SKIN FROM VAPORS OR MIST.

**NFPA CODES**

HEALTH - 3

FLAMMABILITY - 0

REACTIVITY - 0

**Section V - Reactivity Data**

Stability      Unstable            Conditions to Avoid      AVOID CONTACT WITH COMMON METALS, STRONG BASES, OXIDIZERS AND COMBUSTIBLE ORGANICS.  
Stable      X

Incompatibility ( Materials to Avoid)      STRONG BASES, OXIDIZERS, MOST METALS AND COMBUSTIBLE ORGANICS.

Hazardous Decomposition or By products      VARIOUS OXIDES OF PHOSPHORUS, NITROGEN & SOME CARBON DIOXIDE(CO<sub>2</sub> )

Hazardous Polymerization      May Occur            Conditions to Avoid  
May Not Occur      X      NOT APPLICABLE

**Section VI - Health Hazard Data**

Route(s) of Entry:      Inhalation ?      Skin?      Ingestion  
YES      YES      YES

Health Hazards (Acute and Chronic)      SOLUTION IS MODERATELY IRRITATING TO THE EYES, SKIN, AND MUCOUS MEMBRANES. CONCENTRATED SOLUTIONS MODERATELY TOXIC BY INGESTION. DIRECT CONTACT CAN CAUSE SEVERE BURNS. PERSONS WITH PRE-EXISTING SKIN DISORDERS OR DISEASE MAY BE MORE SUSCEPTIBLE TO THE EFFECTS OF THIS SUBSTANCE.

Carcinogenicity      NTP?      IARC Monographs?      OSHA Regulated?  
N/A      N/A      N/A      N/A

**Signs And Symptoms of Exposure**

**EYE CONTACT:** FLOOD WITH EXCESS OF WATER FOR AT LEAST 15 MINUTES. CONTACT A PHYSICIAN

**SKIN CONTACT:** FLOOD WITH WATER & COVER WITH MOIST BAKING SODA. CONTACT A PHYSICIAN

**INHALATION:** REMOVAL TO CLEAN AIR IS USUALLY SUFFICIENT. IF NOT BREATHING, GIVE ARTIFICIAL RESPIRATION. CONTACT A PHYSICIAN.

**INGESTION: DO NOT INDUCE VOMITING!** GIVE WATER WITH MILK OF MAGNESIA OR BEATEN EGGS

Medical Conditions      SEE SIGNS & SYMPTOMS OF EXPOSURE

Generally Aggravated by Exposure      N/A

First Aid: **EYE CONTACT:** FLOOD WITH EXCESS OF WATER FOR AT LEAST 15 MINUTES. CONTACT A PHYSICIAN

**SKIN CONTACT:** FLOOD WITH WATER & COVER WITH MOIST BAKING SODA. CONTACT A PHYSICIAN

**INHALATION:** REMOVAL TO CLEAN AIR IS USUALLY SUFFICIENT. IF NOT BREATHING, GIVE ARTIFICIAL RESPIRATION. CONTACT A PHYSICIAN.

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**Section VII - Precautions For Safe Handling And Use**

Steps to Be Taken in Case Material is Released or Spilled      COVER CONTAMINATED AREA WITH SODA ASH, SLAKED LIME MIXTURE (50:50) MIX AND ADD WATER TO FORM A SLURRY. SCOOP UP SLURRY AND SAVE FOR DISPOSAL.

Waste Disposal Method      ADD ABOVE SLURRY OF MIXTURE (AS IS) SLOWLY TO A LARGE VOLUME OF SODA ASH SOLUTION WITH AGITATION. NEUTRALIZE AND FLUSH TO SEWER WITH RUNNING WATER IN A CONCENTRATION PERMITTED BY LOCAL, STATE AND FEDERAL REGULATIONS.

Precautions to be taken in handling and storing: PROTECT CONTAINERS AGAINST PHYSICAL DAMAGE. STORE

COOL, DRY, WELL VENTILATED LOCATION, AWAY FROM AREA WHERE FIRE HAZARDS MAY BE ACUTE. KEEP AWAY FROM OXIDIZERS AND BASES. PROTECT UNITS FROM DIRECT SUNLIGHT. LOOSEN CONTAINER CAUTIOUSLY.

Other Precautions **VENTILATION:** A SYSTEM OF LOCAL EXHAUST IS RECOMMENDED TO KEEP EMPLOYEE EXPOSURES BELOW THE AIRBORNE EXPOSURE LIMITS. LOCAL EXHAUST VENTILATION IS GENERALLY PREFERRED BECAUSE IT CAN CONTROL THE EMISSIONS OF THE DUST OR VAPOR AT ITS SOURCE PREVENTING DISPERSION INTO THE GENERAL WORK AREA. REFER TO ACGIH DOCUMENT, "INDUSTRIAL VENTILATION, A MANUAL OF RECOMMENDED PRACTICES" FOR DETAILS.

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**Section VIII - Control Measures**

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Respiratory Protection (Specify Type) ORGANIC VAPORS/ ACID GASES (NIOSH APPROVED).  $\text{HN}_3$  IS AN OXIDIZER AND SHOULD NOT COME IN CONTACT WITH CARTRIDGES AND CANISTERS THAT CONTAIN OXIDIZABLE MATERIALS, SUCH AS ACTIVATED CHARCOAL.

Ventilation      Local Exhaust      X      Special

                         Mechanical (General)      Other

Protective Gloves      VITON WITH COTTON LINING

Eye Protection      FACE SHIELD OR SPLASH-PROOF GOGGLES. DO NOT WEAR CONTACT LENSES WHEN WORKING WITH THIS PRODUCT.

Other Protective Clothing or Equipment      LAB COAT, COVERALLS, OR APRON.

Work/Hygienic Practices      HANDLE WITH CARE. WASH AFTER HANDLING.

DOT CLASS: CORROSIVE LIQUID ACIDIC  
INORGANIC NOS  
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