# MATERIAL SAFETY DATA SHEET

## SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

MANUFACTURER: TRANSENE COMPANY, INC.
ADDRESS: DANVERS INDUSTRIAL PARK
10 ELECTRONICS AVENUE DANVERS, MA 01923
TEL: (978) 777-7860 FAX: (978)-739-5640
WWW.TRANSENE.COM
EMERGENCY NO. 1-800-424-9300 CHEMTREC

MATERIAL NAME: **Aluminum Etchant Type D**
REVISED: March 2009
CHEMICAL FAMILY: Acid mixture

## SECTION 2. HEALTH HAZARD INFORMATION

### GHS Classifications

Oxidizing liquids : Not classified
Corrosive to Metals: Category 1
Acute toxicity Oral : Category 5
Acute toxicity Dermal: Category 5
Acute toxicity Inhalation : Category 3
Skin corrosion / Skin irritation : Category 1
Serious eye damage / Eye irritation : Category 1
Respiratory or skin sensitization : Not classified
Special target organ systemic toxicity single exposure: Category 2
Special target organ systemic toxicity repeated exposure : Category 2
Acute aquatic environmental hazards : Not classified
Chronic aquatic environmental hazards: Not classified

### Pictograms or Hazard symbols

Warning: May be corrosive to metals

Harmful if swallowed or in contact with skin.

Danger: Toxic if mist is inhaled.

Danger: Causes severe skin burns and serious eye damage.

Warning. Health hazard. May cause damage to lungs, eyes, and mucous membranes through prolonged or repeated exposure.

**Precautionary Statement Prevention**

Use only in a well-ventilated area. Do not eat, drink or smoke when using this product. Do not breathe fume/gas/mist/vapors/spray.
Wear protective gloves/protective clothing /eye protection/face protection.
Wash hands thoroughly after handling.
Avoid release to the environment

## SECTION 3.COMPOSITION/INFORMATION ON INGREDIENTS

| Material | | Wt % | Toxicity |
|---|---|---|---|
| Sodium-M-Nitrobenzene Sulfonate | CAS#127-68-4 | 5-10 | 2300 mg/m$^3$ |
| Phosphoric Acid | CAS# 7664-38-2 | 55-65 | 1 ppm |
| Acetic Acid | CAS# 64-19-7 | 1-5 | 10 ppm |
| Water | CAS# 7732-18-5 | 20-39 | |
| Total | | | |

## SECTION 4. FIRST AID MEASURES

EFFECTS OF OVEREXPOSURE
FIRST AID:
**Eye Contact:** Corrosive to naked eye; in case of contact flush eyes well for 15 minutes, lifting the lower and upper eyelids occasionally. May cause blindness. Seek medical attention.
**Skin Contact:** Obtain medical attention: Corrosive to exposed skin. Flush skin well with water for 15 minutes, wash with soap and water. Remove affected clothing, get medical attention.
**Inhalation:** If mist or fumes are inhaled, remove to fresh air. If not breathing give artificial respiration. Seek medical attention. Effects may be delayed. May cause chemical burns to the respiratory tract.
**Ingestion:** May cause severe and permanent damage to the digestive tract. Causes gastrointestinal burns and perforation of the digestive tract. Get medical attention immediately.

## SECTION 5. FIRE FIGHTING MEASURES

| Flash Point and Method | Autoignition Temp. | Flammability Limits In Air | LOWER | UPPER |
|---|---|---|---|---|
| non-flammable | NA | | NA | NA |

**Extinguishing media:** Water spray or fog, carbon dioxide and dry chemical. Do not use organic media.
**Special fire fighting procedures:** Wear chemically retardant gear and NIOSH approved self-contained breathing apparatus. Thermal decomposition produces irritating and toxic fumes.

## SECTION 6. ACCIDENTAL RELEASE MEASURES

**SPILLS, LEAKS:** Ventilate area of leak or spill. Clean up personnel should wear protective clothing and NIOSH approved respirator. Dike and cover the contaminated areas with absorbent, non-combustible material such as earth, sand, or vermiculite.

## SECTION 7. HANDLING AND STORAGE

Wash thoroughly after handling. Remove contaminated clothing and wash before re-use. Do not breathe dust, mist, or vapor. Do not expose eyes, skin, or clothing. Keep container closed tightly. Avoid contact with combustibles. Do not use with metal tools or items. Use with adequate ventilation or respiratory protection. Do not store near combustibles or in direct sunlight. Store in a cool, dry, well-ventilated area away from incompatible substances. Separate from metals, alkali, and organics.

## SECTION 8. EXPOSURE CONTROL/PERSONAL PROTECTION

**Respiratory protection:** Wear NIOSH/MESA approved full or half face piece (with goggles) respiratory protective equipment to avoid exposure to iodine vapors above 0.1ppm. A respiratory protection program complying with requirements of 29CFR 1910.134 is recommended.
**Ventilation:** Where adequate ventilation is not available, use NIOSH approved vapor respirator with dust, fume and mist filters. Local ventilation through fume hoods or laminar flow stations is also preferred. Keep fumes away from strong bases.
**Protective gloves:** Skin contact should be minimized through use of rubber gloves.
Other protective equipment: Steel tipped shoes/eye wash station/chemical safety chemical retardant clothing.
Eye protection: Safety goggles / face shield

## SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

| | |
|---|---|
| **Form :** | Syrupy liquid |
| **Appearance :** | Colorless |
| **Odor :** | Vinegar |
| **pH :** | < 2 |
| **Melting point:** | Not available |
| **Boiling point/Boiling range :** | 100 °C (water) |
| **Flash point :** | Non-flammable. |
| **Ignition point :** | Will not ignite. |
| **Danger of explosion:** | Product is not explosive |
| **Decomposition temperature:** | > 150 °C |
| **Vapor density (Air = 1) :** | Not available |
| **Volatiles, %:** | 75-85 |
| **Vapor pressure at 15° C, mm Hg:** | 51 mm Hg at 25 °C |
| **Specific gravity :** | 1.45 g/cc |
| **Solubility in / Miscibility:** | Completely miscible in water |
| **Evap. Rate (Water = 1):** | < 1 |

## SECTION 10. STABILITY AND REACTIVITY

Stability — Stable X — Conditions to avoid: Excess heat , light, confined spaces
Unstable

Incompatible with:
Strong bases, oxidizers, most metals, and combustible organics.

Hazardous decomposition products: Nitrogen oxides, phosphorous oxides, organic fumes

| | | |
|---|---|---|
| Hazardous polymerization: | May occur<br>Will not occur X | Conditions to avoid: Excess heat, damp. |

## SECTION 11. TOXICOLOGICAL INFORMATION

ACUTE:
$LC_{50}$ (Inhalation, rat): 1.35 mg/L/4 h (nitrogen dioxide) (anhydrous substance)
$LD_{50}$ (oral, rat): 1530 mg/kg (phosphoric acid)
LDLo (oral, human): 4500 mg/kg (anhydrous substance) (IUCLID)
Specific symptoms in animal studies: burns to eyes (rabbit), burns to skin (rabbit)

SUBACUTE TO CHRONIC TOXICITY:
Bacterial mutagenicity: Ames test: negative
Investigated as a mutagen

OTHER DATA:
Corrosive. Vapor inhalation burns mucous membranes; causes coughing, dyspnoea. Inhalation may lead to oedemas in the respiratory tract. Burns skin, eyes (risk of blindness). Swallowing results in damage to mouth esophagus, and gastrointestinal tract; risk of perforation; bloody vomiting; death.

## SECTION 12. ECOLOGICAL INFORMATION

**Bioaccumulation :** There is no evidence of bioaccumulation.

**Environmental Fate:** When released into the soil, this material may leach into groundwater. When released to water, acidity may be readily reduced by natural water hardness minerals, but the phosphate may persist indefinitely.

**Ecotoxicity :** Biologic effects:
Toxic effect on fish and plankton. Harmful effect due to pH shift. Forms corrosive mixtures with water even when diluted. Does not cause biological oxygen deficit. Hazardous to drinking water supplies.

Fish toxicity: Gambusia affinis $LC_{50}$: 756 mg/L/96 h
Golden orfe/$LC_{50}$ (96h): > 7500 mg/L
Hazard for drinking water: Fish: $LC_{50}$ > 1500 mg/L.

## SECTION 13. DISPOSAL CONSIDERATIONS

DISPOSAL: Dispose of in accordance with all federal state and local regulations. Send waste to an approved waste disposal facility.

## SECTION 14. TRANSPORTATION INFORMATION

Class 8
PG II
UN3264
Shipping Name: Corrosive Liquid, Acidic, Inorganic, N.O.S. (Phosphoric Acid and Acetic

Acid)

## SECTION 15. REGULATORY

Symbol: C, Corrosive
R-Phrase:
R: Contact with combustible material may cause fire.
R21/22: Harmful in contact with skin and if swallowed.
R35: Causes severe burns.
R41: Risk of serious damage to eyes.
S-Phrases:
S17: Keep away from combustible material.
S23-36/37/39-45 Do not breathe vapor. In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. Wear suitable protective clothing, gloves, and eye/face protection. In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

## SECTION 16. OTHER INFORMATION

NFPA Codes:
Health: 3
Flammability: 0
Reactivity: 1
R8: Contact with combustible material may cause fire.
R35: Causes severe burns.
All ingredients of this product are listed on the US TSCA inventory under their parent anhydrous compounds.