

MSDS Document

Product AC-CU-Fine 9 Replenisher

1. Chemical Product and Company Identification

Product AC-CU-Fine 9 Replenisher

Synonyms: Alkaline etchant for copper printed circuit boards

MSDS ID 9819

Manufacturer

Phibro-Tech Inc.
65 Challenger Road
Ridgefield Park, NJ 07660

Phone Number

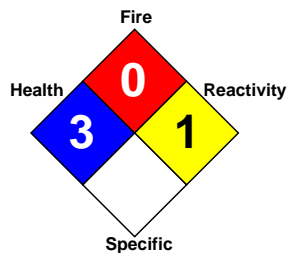
(201) 329-7300

Emergency Phone

CHEMTREC (800) 424-9300

CHEMTREC International (703) 527-3887

Revision Date 7/8/2008



2. Composition and Information on Ingredients

| Ingredient | CAS Number | Weight % | ACGIH TLV | PEL | STEL |
|--------------------|------------|-----------|-----------------|--------------|------|
| AMMONIUM CHLORIDE | 12125-02-9 | 22% - 25% | 10 mg/m3 (fume) | | |
| AMMONIUM HYDROXIDE | 1336-21-6 | 17% - 19% | 25ppm (NH3) | 50 ppm (NH3) | |
| AMMONIUM CARBONATE | 10361-29-2 | 1% - 3% | | | |

3. Hazard Identification

Ingestion

This material may be harmful or fatal if swallowed. Corrosive and may cause severe and permanent damage to mouth, throat, and stomach. May cause vomiting.

Inhalation

Toxic by inhalation. May be fatal if inhaled. Corrosive. May cause irritation of the upper respiratory tract.

Eye

Corrosive to the eyes and may cause severe damage including blindness. Vapor may cause eye irritation.

Skin

Contact causes severe skin irritation and possible burns. Frequent or prolonged contact may irritate the skin and cause a skin rash (dermatitis).

Exposure may aggravate other pre-existing diseases, including diseases of the eyes, skin and lungs,

4. First Aid Information**Eye**

Immediately flush with plenty of water. After initial flushing, remove any contact lenses and continue flushing for at least 15 minutes. Have eyes examined and tested by medical personnel.

Skin

In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Get medical attention immediately. Thoroughly wash (or discard) clothing and shoes before reuse.

Inhalation

Rescuers should put on appropriate protective gear. Remove from area of exposure. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Keep victim warm. Get immediate medical attention.

Ingestion

If swallowed, do NOT induce vomiting. Give victim a glass of water or milk. Call a physician or poison control center immediately. Never give anything by mouth to an unconscious person.

5. Fire Fighting Measures

| | |
|-----|-------|
| LEL | 15.75 |
| UEL | 26 |

The Flammable Limits are for ammonia vapor.

Flammable Properties

This material is not considered a fire hazard. During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion. Vapors may form explosive mixture with air.

Extinguishing Media

Use alcohol foam, carbon dioxide, or water spray when fighting fires involving this material.

Cool fire exposed containers with water spray. Exposure to extreme heat may cause containers to burst.

Fire fighting instructions

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear. Water runoff can cause environmental damage. Dike and collect water used to fight fire.

6. Accidental Release Measures

Clean-up

Ventilate area of leak or spill. Remove all sources of heat or ignition. Vacuum or sweep up material and place in a disposal container. Absorb spill with inert material (e.g., dry sand or earth), then place in a chemical waste container. Neutralize spill with a weak acid such as vinegar or acetic acid. Do not flush to sewer.

7. Handling and Storage

Handling

Wash thoroughly after handling. Use with adequate ventilation. Avoid breathing (dust, vapor, mist, gas). Avoid contact with eyes, skin, and clothing.

Storage

Store in a cool place in original container and protect from sunlight. Store away from heat. Keep from freezing. Store away from incompatible materials. Keep container closed when not in use. Keep away from food and drinking water.

8. Exposure Controls and Personal Protection

Engineering controls

Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower. Local exhaust ventilation may be necessary to control any air contaminants to within their TLVs during the use of this product.

Respirators

A NIOSH-approved air purifying respirator with the appropriate cartridge or canister for the hazards may be permissible under certain circumstances where airborne concentrations are expected to exceed exposure limits. Protection provided by air purifying respirators is limited. Use a positive-pressure air-supplied respirator if there is any potential for an uncontrolled release, exposure levels are not known, or any other circumstances where air-purifying respirators may not provide adequate protection.

Other clothing

Wear safety glasses with side shields (or goggles) and a face shield. Use gloves, and other body coverings, recommended for this material by manufacturers or suppliers based on test data showing adequate permeation and penetration resistance.

9. Physical and Chemical Properties

Physical State

Liquid

| | |
|----------------------------|-----------------------------|
| Specific Gravity | 1.03 |
| Color/Appearance | Clear, Colorless |
| Odor | Strong Ammonia DO NOT SMELL |
| pH | 9.4-10.4 |
| Boiling/Cond. Point | 212 F |
| Solubility | Complete |
| Evaporation Rate | 1 |
| Vapor Density | 0.6 |
| Vapor Pressure | Aqueous ~20 |

10. Stability and Reactivity

Thermal Stability

Stable under normal conditions of use and storage.

Conditions to Avoid

Incompatibles. Exposure to heat. Direct sunlight. Protect from freezing.

Hazardous Polymerization

Will not occur.

Hazardous Decomposition Products

Thermal decomposition may release toxic ammonia fumes. Thermal decomposition releases oxides of nitrogen.

Incompatibility

Acids, Acrolein, Dimethyl Sulfate, Halogens, Silver Nitrate, Propylene Oxide, Nitromethane, Silver Oxide, Silver Permanganate, Oleum, And Beta-Propiolactone. Most common metals.

11. Toxicological Information

Carcinogen

NTP: No

IARC: No

OSHA: No

TOXICITY DATA: (44 % AMMONIUM HYDROXIDE)

Oral Toxicity: LDLo: 43 Mg/Kg (Human)

Oral Toxicity: LD50: 350 Mg/Kg (Rat)

Oral Toxicity: LDlo: 750 Mg/Kg (Cat)

Eye Toxicity: SEV1 Mg/30S Rns (Rabbit)

Inhalation Toxicity: LDLo: 5000 Ppm (Human)

Inhalation Toxicity: TCLo: 700 ppm:Eye (Human)

Inhalation Toxicity: TCLo: 408 ppm:Irr (Human)

TOXICITY DATA: (100 % AMMONIUM CHLORIDE)

Oral Toxicity: LD50: 1650 Mg/Kg (Rat)

LD50: 1300 Mg/Kg (Mouse)

LDLo: 600 Mg/Kg (Dog)

LDLo: 1000 Mg/Kg (Rabbit)

Eye Toxicity: Sev 500 Mg/24H (Rabbit)

Intramuscular Toxicity: LD50: 30 Mg/Kg (Rat)

Intraperitoneal Toxicity: LD50: 1439 Mg/Kg (Mouse)

Subcutaneous Toxicity: LDLo: 500 Mg/Kg (Mouse)

TOXICITY DATA: (100 % AMMONIUM CARBONATE)

Intravenous Toxicity: LD50: 96 Mg/Kg (Mouse)

Intravenous Toxicity: LDLo: 200 Mg/Kg (Dog)

Subcutaneous Toxicity: LDLo: 250 Mg/Kg (Frog)

12. Ecological Information

Harmful to fish and other water organisms. Keep out of waterways.

Data for 44% AMMONIUM HYDROXIDE

LC50: 0.008 Mg/L 24H (Rainbow Trout)

LC50: 8.2 Mg/L 96H (Flathead Minnow)

LC50: 0.024 Mg/L 48H (Bluegill)

EC50: 0.66 Mg/L 48H (Water Flea)

13. Disposal Considerations

Disposal Method

Dispose in accordance with applicable federal, state, local environmental and regulatory requirements.

14. Transportation Information

DOT Shipping Name: RQ, Corrosive Liquid, Basic, Inorganic, N.O.S.(Ammonium Hydroxide, Ammonium Chloride)

DOT Hazard Class: 8

Hazardous Ingredients: Ammonium Hydroxide, Ammonium Chloride

Identification Number: UN 3266

Packing Group: II

Label: Corrosive

RQ is applicable when shipping 1000# or more ammonium hydroxide or 5000# or more ammonium chloride in one package.

NOTE: During an incident involving this material, Use Of DOT Emergency Response Guide No. 154 is also recommended.

15. Regulatory Information

Toxic Substances Control Act(TSCA)

Chemical ingredients are on the TSCA inventory.

Superfund Reportable Quantity (RQ)

1000#/454 KG - Ammonium Hydroxide 5000# /2270 KG- Ammonium Chloride

Hazardous Waste No.

Not Regulated.

Sara Title III (Section 313)

This product contains ammonia and is subject to reporting as ammonia and ammonium ion

on an ammonia basis = 1.6 Lb/Gal

California Proposition 65 Warning

This product may contain chemicals known to the state of California to cause cancer, or birth defects or other reproductive harm.

Canadian Lists

DSL/NDSL

Found on the Domestic Substances List.

WHMIS

Ammonium hydroxide: item number 96, reporting at 1% threshold; Ammonium chloride is item number 88 from the Ingredient Disclosure List and is subject to reporting at 1% threshold.

STATE LISTS: This product contains ingredients that are listed for disclosure or reporting in the states of California, Connecticut, Illinois, Louisiana, Massachusetts, Minnesota, North Carolina, New Jersey, New York, Pennsylvania, Rhode Island, and Texas. Please check with the appropriate Agencies.

For States Not Listed: Please check with the appropriate agencies.

16. Other Information

It is reasonable to assume that ammonia etchant compounds contain arsenic, cadmium, chromium, and lead in concentrations ranging from a few parts per billion to several hundred parts per million. All information presented herein is given in good faith and is based on sources and tests considered to be reliable, but cannot be guaranteed. It is the user's full responsibility to accept risk for the safety, toxicity, handling, storage, and use of the product, as well as to determine the suitability of the product for a specific purpose. We make no warranty as to the results to be obtained in using the product; therefore all risks must be assumed by the user.