

Acetic Acid

Process:

Acetic Acid for metal etching, polishing and surface modification.

Materials:

Acetic Acid (Glacial), sometimes diluted with water.

Incompatible Materials:

No oxidizers (such as Hydrogen Peroxide or Nitric Acid) without specific training. Be cautious of splattering due to heating if etching bulk metals or combustibles.

Hazards:

Destructive on contact with human tissues. Acetic Acid fumes will erupt from bottle and baths and are harmful to inhale. If your nose tingles from inhaled Acetic Acid, you will no longer be able to smell the fumes and should leave the area. Though typically apparent immediately, burns may take minutes to become apparent. Acetic acid is flammable, and its fumes can ignite when bath is warmed above 40C (such as when heated due to mixing). Mixing with strong acids can lower the flammable temperature.

Exposure Actions: Do what's below, and then notify CNM2 staff within a few hours. For advice, call CNM2 staff.

Eyes: Hold eyes open in running eyewash station for 15 minutes and call 911 as soon as possible.

Skin: Remove splashed clothing, wash for 15 minutes and seek medical aid if irritation persists.

Personal Protective Equipment:

Goggles, face shield, heavy chemical gloves (blue disposable Nitridex)¹, and heavy chemical apron. The blue disposable 'Nitridex' nitrile gloves are only splash resistant to concentrated (>40%) Acetic Acid meaning gloves should be rinsed upon exposure as it takes only 30 seconds for the acid to start working its way through the blue gloves. So keep watch for splashes and spills.

Acceptable Locations For Use:

Wet process stations 3, 8, 9, 12, 13 acid & base fume hood². If hotter than a simmer, only acid & base fume hood.

Additional Process Notes:

If dilution is needed measure water, add Acetic Acid, then stir³. Heat only after mixing is complete if greater than ambient temperature is desired⁴. Beware of fumes when heating. Acetic Acid is transparent so be sure to rinse your work station after use². Though Acetic acid is both an acid and an organic store it with the acids, preferably away from Nitric acid or Hydrogen Peroxide.

Disposal:

Allow to cool, then decant or aspirate to neutralizer. Heavy metal bearing solutions should instead be disposed of in the "Acetic Bearing Acids" bottle.

*Additional SOPs available, see: 1. PPE Choice and Cleaning
5. Haz Waste Management

2. Work Station Cleaning

3. Pouring and Mixing

4. Hotplates