

## Hydrogen Peroxide

### **Process:**

Hydrogen Peroxide for etches, cleaning solutions, monolayer deposition and others.

### **Materials:**

Hydrogen Peroxide (30% wt), sometimes diluted with water.

### **Incompatible Materials:**

No Solvents or other liquid organics, as they tend to form explosive solids. Avoid metal powders as many explosive incompatibles exist. Be cautious of splattering due to heating<sup>4</sup> if etching bulk metals or combustibles. Mixing with Sulphuric Acid requires special training<sup>3</sup>. Use caution as many other incompatibles exist.

### **Hazards:**

Has many dangerous incompatibles. Destructive on contact with human tissues. Produces some irritating fumes. Expect heating if mixing Hydrogen Peroxide into a spent chemical accumulation bottle, and never tightly cap bottles as pressurization and explosion will occur.

**Exposure Actions:** Do what's below, and then notify NCNC staff within a few hours. For advice, call NCNC 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)<sup>1</sup>, and heavy chemical apron.

### **Acceptable Locations For Use:**

Wet process stations 2, 3, 8, 9, 11, 12, 13, acid & base fume hood<sup>2</sup>. If hotter than a simmer, only acid & base fume hood.

### **Additional Process Notes:**

Measure water if necessary and slowly add Hydrogen Peroxide to water, then stir<sup>3</sup>. Heat only after mixing is complete if greater than ambient temperature is desired<sup>4</sup>. Never tightly cap bottles of spent Hydrogen Peroxide acid, which can cause an explosion. NCNC provided Hydrogen Peroxide bottles come with special venting caps, which prevent these explosions. You can distinguish these caps by a tiny hole on the top and 'filter paper' on the inside. Do not cap Hydrogen Peroxide bottles with anything but a venting cap.

### **Disposal:**

Allow to cool, then decant, or aspirate to neutralizer. Heavy metal bearing solutions should instead be disposed of in the "Transiently Oxidizing Acids" bottle<sup>5</sup>. Never tightly cap spent oxidizer bottles with non-venting caps. Instead, leave the cap  $\frac{1}{4}$  to  $\frac{1}{2}$  turn from tight.

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

2. Work Station Cleaning

3. Pouring and Mixing

4. Hotplates