

## STANDARD OPERATING PROCEDURE

### Chemical use in AggieFab

#### **I. SCOPE**

1. The purpose of this document is to describe how to safely store, use, dispose of, and clean up the variety of chemicals in AggieFab.

#### **II. APPLICABLE DOCUMENTS, MATERIALS AND REQUIREMENTS**

1. Those who will use strong acids and bases, e.g., HF, HCl, H<sub>2</sub>SO<sub>4</sub>, BOE, or piranha solution, are required to take the Corrosives Training offered by AggieFab staff.

#### **III. CHEMICAL STORAGE**

1. Chemicals are stored underneath the wet benches. Different benches are labeled for the different types of chemicals stored. The chemicals must be returned to the proper storage location.
2. Photoresists are stored in the refrigerator in Bay 4.
3. White labels are attached by the AggieFab staff to provided chemicals and photoresists. If you are the first person to use a new bottle, fill in the "Opened By" and "Date Opened" spaces on the label. This helps us monitor the age and quality of the chemicals.
4. Owners of project-owned chemicals that are the same as, or different than, those provided by AggieFab must affix the fluorescent labels provided by AggieFab and fill in the required information, particularly the chemical name, owner, and dates.

#### **IV. CHEMICAL USE**

1. Full PPE is required for the utilization of acids (HF, BOE, HCl, H<sub>2</sub>SO<sub>4</sub>, and Piranha) and strong bases. This includes an apron, safety glasses, face shield, and chemical resistant gloves.
2. "Light" PPE is required for the utilization of metal etchants (copper, aluminum, and gold). This includes safety glasses and chemical resistant gloves.
3. The appropriate fume hood must be used for processing with HF, corrosives, resists, or acids.

#### **V. CHEMICAL DISPOSAL**

1. Solvents, metal etchants, solvents with metal particles, and photoresist developers/strippers should be captured in a waste beaker and transferred to their respective waste containers. Do not pour these liquids down the drain.
2. Empty waste containers should be available in Bays 1 and 4, although users should always add to an existing waste container when present and not create multiple new ones.
3. Use aspirators to dispose of acids, such as HF, BOE, HCl, H<sub>2</sub>SO<sub>4</sub>, and Piranha (wait 1+ hours). Follow with water. The exception is for acids that contain metal particles - these must be stored in a properly labeled waste container.

4. After use, glassware should be rinsed at least twice with DI water and placed in a drying oven or rack with open side down.

**VI. CHEMICAL CLEAN UP**

1. AggieFab provides spill kits for acids, bases, and HF. These must be physically located prior to utilizing corrosives. AggieFab staff should be immediately notified of a spill; users should only use the spill kit after hours if staff members are not present.

**VII. SIGNATURES AND REVISION HISTORY**

Revision History:

<b>Revision</b>	<b>Author</b>	<b>Date</b>	<b>Changes</b>
Original Issue	Sandra Malhotra	5/18/2023	N/A

Approvals:

Technical Manager Signature: *Sandra G. Malhotra* \_\_\_\_\_

Date: \_\_\_\_\_ 5/18/2023 \_\_\_\_\_