Owen Hall Cleanroom Labs
Liquid Chemical Waste Collection Policy
February 2010

- The individual research groups are responsible for monitoring adherence to this policy. As a "self policed" policy, it is imperative that all users of the Owen Hall clean room act responsibly and ask questions in cases that are not clear to them. If there are questions or concerns, please contact Chris Tasker chris@eecs.oregonstate.edu, or Bill Cowell cowellb@onid.orst.edu

- General comments
    - The activities that generate liquid waste in the cleanroom include wet etch, substrate cleaning, and photo lithography.
    - This policy outlines procedures that will keep waste appropriately segregated and stored for pick up. Before you begin work, ensure that you understand how to segregate waste properly and that you have a container of the appropriate material and volume to collect liquid waste.
    - The only liquid that is approved to be disposed of in the sink is water (tap and deionized (DI)).
    - To minimize the cost associated with liquid waste disposal
        - Dispose of water (tap and DI) in the sink. Try to minimize the amount of water that is put into the waste containers.
        - Since cost is often the same for disposal of partially or fully filled waste containers, only request pick up of containers when full.
        - Collect waste solvents in a tray, and then rinse substrates with water into the sink. This minimizes water in the waste containers and prevents solvents from going in the sink.
        - Solvents can be recycled as long as they do not have other chemicals mixed with them. Keep photolithography solvent waste separate from substrate cleaning solvent waste.
- Presently approved acids, bases, and solvents
    - Acids
        - Non-HF **(category 1)**
            - Nitric
            - Phosphoric
            - Sulfuric
            - Hydrochloric
            - Acetic
        - HF **(category 2)**
            - HF (varying percentages)

            - Buffered oxide etch (BOE)
            - Ammonium fluoride
    - Bases **(category 3)**
        - Potassium hydroxide
        - Sodium hydroxide
    - Solvents
        - Non-photoresist contaminated solvents **(category 4)**
            - Acetone
            - IPA
            - Methanol
        - Photoresist contaminated solvents **(category 5)**
    - If there is a need to use a liquid chemical not on this list, please inform Chris Tasker or Bill Cowell about the chemical before introducing it into the lab.
        - New chemicals must have an MSDS in the red binders
- Chemical waste needs to be segregated **by category** into appropriate containers
    - Researchers are responsible for acquiring their own waste containers either individually or as a group.
    - Waste containers need to minimally be of the same material (material type and thickness) as the container the chemicals came in.
    - Category 1, 3, 4, and 5 wastes may be stored in low density poly ethylene (LDPE) containers.
    - Category 2 waste (HF) must be stored in high density poly ethylene (HDPE) containers
    - Containers must have a tight fitting and secure lid that will contain vapors and prevent a spill if tipped. Outside of containers should be kept clean.
- The chemical waste containers must be labeled with
    - Owner (if group ownership, there must be group name and contact name and information)
    - Type of waste
    - Date the container's use was begun
- Store full waste containers as follows
    - Solvent waste in the yellow metal cabinet
    - Photoresist waste in the yellow metal cabinet
    - Category 1 acid waste in the left side of the blue metal cabinet
    - Category 2 (HF) acid waste in the right side of the blue metal cabinet
    - Category 3 (base) waste under the fume hood in room 441B (room number is on hood)
    - When pick-up is needed contact Chris Tasker