

## Minor Chemical Cleanup and Waste Disposal Procedure

While working with chemicals, it is common that minor drips or spills may occur particularly while transferring chemicals from one vessel to another, e.g. at container spouts, on glassware exteriors, or on bench tops. These minor drips or spills, roughly 2-3mL in volume, are routine and must be dealt with accordingly by the user. Chemical spills larger than 2-3mL must be treated as spill response, which require an immediate risk assessment and prompt action; users may refer to the Cleanroom Spill Response Procedure provided in the wet bench areas for further guidance or contact 4D LABS staff for assistance.

1. Any chemical droplets or minor spills must be cleaned up by the user. If the quantity is less than 2-3mL, e.g. **smaller than the size of a loonie**, use wipes to clean up the spill. Rinse the contaminated wipes with plenty of water and dispose of the wipes in the chemical solid waste garbage. **Note: This policy does not apply to wipes used to clean up photoresist, which should be disposed of in the designated container without rinsing.**
2. If the spill is **larger than the size of a loonie but less than 50 mL**, the user may perform the minor spill response cleanup procedure to neutralize and clean up the spill. Refer to the Cleanroom Spill Response Procedure provided in the wet bench areas.

**IMPORTANT: Contact staff if you have any questions about cleaning up spills.**

3. **If the spill is larger than 50 mL, the user must immediately notify nearby lab users, evacuate the area, and contact Campus Security and the 4D LABS staff.** Refer to the Cleanroom Spill Response Procedure for further information.
4. All materials used to clean up after silane compound work must be stored in a Ziploc bag, labelled, and stored with the chemical waste in the transfer bay. An updated silane deposition procedure is posted in the allowed silane working area.
5. Waste made up of sharp items, which could potentially cut or pierce, with potentially hazardous contamination, should be deposited in the yellow 'Sharps' container.
6. When the user has finished working on a wet bench, all items placed on the bench by the user should be removed, including containers, wipes, thermometers, and hot plates.

## Solid Chemical Waste Disposal Procedure

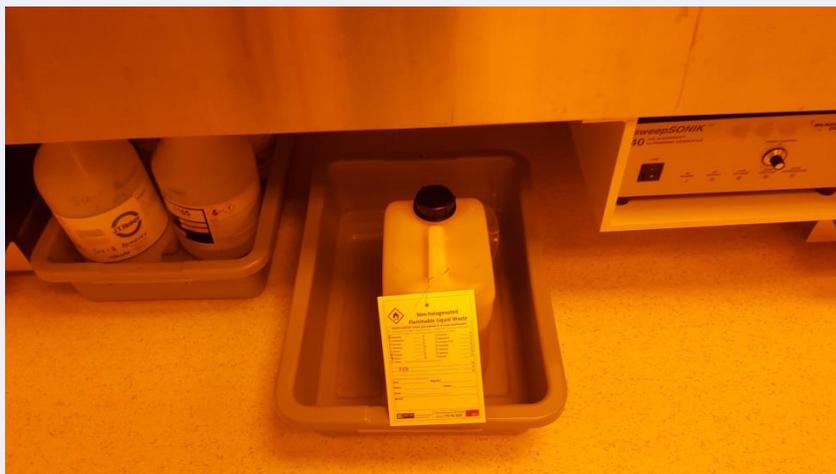
When the user has finished working on a wet bench, all items placed on the bench by the user should be removed, including containers, wipes, thermometers, and hot plates.

This also applies to the polisher station, microtome, XRD room, ICPMS station, etc. wherever solid and liquid chemicals might spill and a cleaning is needed.

1. Any chemicals spilled on the wet bench must be cleaned up by the user, In the case of acid or base spill; spill kit should be used to neutralize the chemicals. Users are encouraged to report the spill incident to the 4D LABS staff even if it is a small spill. **If the spill is larger than 50 g or 50 mL, the user must immediately notify nearby lab users, evacuate the area, and contact Campus Security and the 4D LABS staff.**
2. Any wipes with water soluble and low toxicity chemicals (e.g., acids, bases, alcohols) **smaller than the size of a loonie** on them should be rinsed, squeezed dry, and placed in a solid waste bin.
3. Wipes that have been soaked with solvents should be neutralized first. Please do not put solvent soaked wipes into the solid waste bin.
4. **All materials used to clean up after silane work must be stored in a Ziploc bag, labelled, and stored with the chemical waste in the transfer bay.** An updated silane deposition procedure is posted in the allowed silane working area.
5. Waste made up of sharp items, which could potentially cut or pierce, with potentially hazardous contamination, should be deposited in the designated yellow 'Sharps' container. Non-contaminated glass waste should be deposited in the Glass Waste box.
6. All non-sharp items such gloves, towels/wipes, solid pieces, contaminated with user's samples (including dry powders) or other lab-approved chemicals, but not easy to de-contaminate, should be disposed in designated Chemical Solid Waste bins, which have covers.

## Liquid Chemical Waste Disposal Procedure

All chemical waste containing **organic solvents, acids, bases, developers, and particles** must be collected and put into the appropriately labeled waste solution containers. **Be very cautious to avoid accidental mixing of waste**; waste should only be added to appropriately designated and labeled waste containers. Liquid waste containers are usually located under the wet benches, or other locations specified by the 4D LABS staff, and each container is dedicated to a specific class of chemicals. Check the label prior to any disposal. **DO NOT fill the container more than 75% of its volume or above the Max Filled mark!**



1. Select an appropriate waste container for the solvent you are disposing.

Note: If you cannot find an appropriate waste container or it is full, request assistance from the 4D LABS staff.

**IMPORTANT: It is prohibited to dump waste solutions directly down wet bench drains.**

2. Place the waste container into the sink in the bench. Then remove the container cap.
3. Use an appropriate funnel labelled "For Waste Disposal" and place it into the waste container. Glass and plastic funnels are available for handling different chemical needs.

4. Pour the liquid waste very slowly into the container. **Make sure the waste chemical is at room temperature before dumping it into the waste container. . DO NOT fill the container more than 75% of its volume or above the Max Filled mark!**



5. Put the cap back on the waste container. Make sure you do not overtighten the caps.
6. Get a wipe and wipe the bottom of waste container. Ensure it is dry.
7. Return the waste container to its storage location.
8. Rinse the funnel into the sink with plenty of water and return the funnel to its original tray.
9. Rinse the wipe thoroughly with water and dispose of it in the Chemical Solid Waste bin.