

Appendix G – Laboratory Spill Clean-Up Procedures

Laboratory personnel can clean up small spills if trained and competent to do so. Small spills include chemical spills that are up to 1 liter in size and of limited toxicity, flammability, and volatility, and mercury spills from broken thermometers (about 1.5 grams). If respiratory protection is needed for spill clean-up, the spill is too large to be handled by laboratory staff. Dial 911 or call Cal Poly Humboldt Police Dispatch at **707-826-5555**. Once emergency responders have been contacted, notify EH&S at risk-management@humboldt.edu. Commercial chemical and mercury spill kits are available, which include protective equipment such as goggles and gloves, neutralizing and absorbing materials, bags, and scoops. You can also make your own spill kits to include materials described below.

Chemical Spill Kits

Chemical spill kits contain the following materials:

- Sodium bicarbonate
- Citric acid
- Vermiculite or other diking material
- pH paper
- 1 pair neoprene or nitrile gloves
- 1 pair goggles
- 1 scoop
- Spill pillows and/or sorbent pads
- Disposable shoe covers

Mercury Spill Kits

Mercury spill kits contain the following materials:

- Disposable gloves
- Disposable shoe covers
- Index cards or rubber squeegees
- Disposable syringe or vacuum trap flask fitted with tubing or Pasteur pipette
- Inactivating solutions and/or powders

Weak Inorganic Acid or Base Spill Clean-Up Procedure

1. Wear gloves, goggles, laboratory coat and shoe covers
2. To clean up a spill of weak inorganic acid or base, neutralize the spilled liquid to pH 5 to 8 using a neutralizing agent such as:
 - a. Sodium bicarbonate
 - b. Soda ash
 - c. Sodium bisulfate
 - d. Citric acid
3. Absorb the neutralized liquid with an absorbent such as:
 - a. Sorbent pads
 - b. Diatomaceous earth
 - c. Dry sand
 - d. Sponges
 - e. Paper towels
 - f. Vermiculite
4. Scoop or place absorbent materials into a clear plastic bag.
5. Do not rinse or dispose of any chemicals down the sink or into any drain.
6. Double bag and tag the bag with a chemical waste label.
7. Fill out the Hazardous Waste Disposal Request form to request a disposal via the EH&S website.

Solvent Spill Clean-Up Procedure

1. Wear gloves, goggles, laboratory coat and shoe covers
2. Absorb the spill with a non-reactive material such as;
 - a. Vermiculite
 - b. Dry sand
 - c. Paper towels
 - d. Sponges
3. Scoop or place absorbent materials into a clear plastic bag.
4. Do not rinse or dispose of any chemicals down the sink or into any drain.
5. Double bag and tag the bag with a chemical waste label.
6. Fill out the Hazardous Waste Disposal Request form to request a disposal via the EH&S website.

Broken Mercury Thermometer Clean-Up Procedure

1. Clean up the spill immediately after it has occurred.

Laboratory Spill Clean-Up Procedures

2. Prevent the spread of the spilled mercury. Do not allow people to walk through the spill area.
3. Wear disposable gloves and shoe covers during the cleanup.
4. Push the mercury droplets together into a bead using an index card or rubber squeegee.
5. Aspirate the beaded mercury into a disposable syringe or use a disposable Pasteur Pipette attached with tubing to a vacuum flask to aspirate the mercury into the flask. The flask should contain water. Always have a second vacuum flask between the mercury flask and the house vacuum.
6. Chemically inactivate any residual mercury. There are several methods to inactivate the residual mercury including:
 - a. Use a commercial inactivating powder and follow the directions for use.
 - b. Sprinkle zinc powder over the spill area. Then moisten the zinc with a 5 to 10 percent sulfuric acid solution until a paste is formed. Scour the contaminated surface and allow the paste to dry. Sweep up the dried paste.
 - c. Wash the contaminated area with a detergent solution. Rinse and then swab the area with a calcium polysulfide solution containing two to four tablespoons of calcium polysulfide per gallon of water.
7. Place collected mercury and materials used in the cleanup into a clear plastic bag.
8. Double bag and label the waste.
9. Affix a generator waste label to the bag and request a pickup through the Hazardous Waste Disposal Request Form.

If a large spill occurs, call 911 from a campus phone or call Cal Poly Humboldt at **707-826-5555** from a cell phone. Once emergency response personnel are notified, notify EH&S at risk-management@humboldt.edu.