

Emergency Procedures for Spills of Radioactive Materials



❖ If the spill is major (> 100 μCi , or involves personal contamination, or involves injury, or is outside the radiation work area):

1. Call campus dispatch at 911 to contact EH&S. Tell them if you need medical attention or fire assistance.
2. Secure the contaminated area.
3. Wait for EH&S responders.
4. Do not allow personnel to return to work until the area is cleared by the RSO.

While waiting for responders:

- If you are injured (e.g., hand cuts) in the RAD work area, wash the injured area with soap and water, then cover the area with a sterile bandage or clean clothing.
- If eyes are contaminated, rinse eyes at an eye wash for 15 minutes.
- If your clothing is contaminated, remove it immediately.
- If your body is contaminated, wash with soap and water, and put on clean clothing.

If the spill is minor (< 100 μCi), open your Radiation Safety Spill Kit and use *SWIMS*:

1. **S** – Stop the spill and stop what you’re doing (stop your research). Cover the spill with absorbent pads (dampened if spilled material is solid). If your gloves or clothing are contaminated, remove them immediately and place them in a plastic bag. Wear clean clothing, gloves, safety glasses, and a laboratory coat. Wear booties (shoe coverings) if contamination is on the floor.
2. **W** – Warn others in the area. They may not be contaminated and need to know.
3. **I** – Isolate the area so others don’t get contaminated. If the spill is over a large area, use caution radioactive material tape and lock the door.
4. **M** – Monitor with a Geiger counter (starting with x 0.1 scale) for skin contamination and clothing contamination. Any readings over 2 times background are contaminated; the background levels are in the range of 30 - 40 counts/minutes (CPM). Ask another Radiation User to assist you. Take your time in surveying the hands, shoes, laboratory coat, pants, and face for all contaminated individuals.
5. **S** – Survey and cleanup the contaminated area. Do not forget the proper protection equipment (PPE): gloves, laboratory coat, eye protection, and clean booties before attempting to clean the spill. Use a Geiger counter to determine the perimeter of the spill. Mark the spill area and hot spots with radiation tape. Thoroughly clean by wiping the contamination with absorbent paper (with Scrubbing Bubbles or soap added to a paper towel) working from the outer perimeter towards the center of the spill in one direction.
6. **TO CONCLUDE**, Place contaminated absorbent paper and gloves in a plastic bag, label “caution radioactive”, and place it in the respective radioactive waste container. Once finished with the decontamination, survey the area to make sure that it is reading background levels. Take wipe tests. Continue decontamination until wipe tests are less than twice background.
7. Visit the EH&S website (<https://ehs.ucsc.edu>) and select **Laboratory Incident** to report spills of radioactive materials.

EH&S Contact Information

Radiation Safety Officer (RSO): 831-459-3541

Environmental Health and Safety (EH&S): 831-459-2553 (voice mail), ehs@ucsc.edu