



RADIATION SAFETY



Laboratory Rules

1. Smoking, eating or drinking shall not be permitted in radionuclide laboratories.
2. Food or food containers shall not be permitted in the laboratory and refrigerators shall not be used for storage of food and radioactive materials.
3. Radionuclide work areas shall be clearly designated and should, to the extent possible, be isolated from the rest of the laboratory. The work area shall be within a hood if the radioactive material to be used is in a volatile form.
4. All work surfaces shall be covered with absorbent paper, which should be changed regularly to prevent the buildup of contamination.
5. Work involving relatively large volumes or activities of liquid radioactive material should be performed in a spill tray lined with absorbent paper.
6. Protective clothing shall be worn when working with radioactive materials. This includes laboratory coats, gloves, protective footwear, and safety glasses.
7. Dosimeters, if issued, shall be worn when working with radioactive material or radiation producing devices.
8. Mouth pipetting shall not be permitted in radionuclide laboratories.
9. All containers of RAM and items suspected or known to be contaminated shall be marked radioactive and indicate isotope.
10. All contaminated waste items shall be placed in a container specifically designated for radioactive waste. Sharp items such as needles or razor blades shall be placed in a designated "sharps" container.
11. A radiation survey shall be performed at the end of each procedure involving radioactive materials. All items found to be contaminated shall be placed either in the radioactive waste container or a designated area. Any personnel or items found to be contaminated must be decontaminated as soon as possible or properly labeled. EH&S shall be notified immediately if personnel or other extensive contamination is found within the laboratory.
12. A record of the types and quantities of radionuclides possessed by each principal investigator shall be maintained.
13. Security of radioactive material, sources, samples and waste must be maintained at all times to prevent unauthorized removal or tampering.

Emergency Procedures

Minor Spills and Contaminations

Incidents involving the release or spillage of less than 100 microcuries of a radionuclide in a nonvolatile form can generally be regarded as minor. In such cases:

1. **Notify** all other persons in the room at once.
2. **Clear** the room of all persons except those needed to deal with the spill.
3. **Confine** the spill immediately.

Liquids: Cover with absorbent paper or chemical (such as calcium bentonite) on the spill. EH&S has prepared standard "Spill Control Kits" which are available from Chemistry Stores.

Solids: Dampen thoroughly, taking care not to spread contamination. Use water, unless a chemical reaction would release air contaminants; otherwise use oil.

4. **Notify** the laboratory supervisor.
5. **Notify** the Department of Environmental Health and Safety at (515)294-5359 or ehsinfo@iastate.edu

Major Spills and Contaminations

Incidents which occur outside the hood and involve the release of more than 100 microcuries of a radionuclide in a nonvolatile form or the release of any amount of a radionuclide in a volatile form, should be considered "major." In such cases:

1. **Evacuate** the room immediately shutting doors and windows on the way out.
2. **Notify** the laboratory supervisor.
3. **Notify** the Department of Environmental Health and Safety at (515)294-5359 or ehsinfo@iastate.edu
4. **Post** the laboratory door with a "Keep Out" sign.
5. **Assemble** those persons who were present in laboratory near the laboratory entrance.
6. **Wait** for assistance.



RADIATION SAFETY ASSISTANCE:

Environmental Health and Safety
(515)294-5359 or ehsinfo@iastate.edu

(After hours) Department of Public Safety
(515)294-4428

