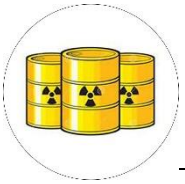
Radiation Safety Matters 2022/2023
PET Center

Contamination Surveys
- Perform surveys during and after every use of radioactive material.
- Use the correct instrument and survey slowly.
- Keep your instrument in good working condition and ensure it is calibrated.

Face Masks
- Do not touch your mask with gloved hands. This can lead to the spread of radioactive contamination.
- Survey your face mask during personal surveys.
- Only wear your lab face mask while in the lab. Remove and dispose before going home.

Safety Culture
The Nuclear Regulatory Commission expects individuals and organizations to establish and maintain a positive safety culture. Do your part:
- Take responsibility for safety
- Talk about safety
- Plan for safety
- Look out for others
- Model safety

Maintain NRC/DOT Regulatory Documentation
- PET radioisotope package receipt surveys; decay-in-storage PET radioactive waste release surveys
- PET-specific orientation training.
- Survey meter calibrations; dose calibrator tests.



Radioactive Waste
- Know and follow the procedures for radioactive waste handling and disposal in your area.
- Segregate all waste properly and don't overfill containers (i.e. sharps/needle boxes, dry waste).
- Perform thorough release surveys of decayed waste containers and document, as required.

Security
- Store all radioactive materials securely.
- Keep lab doors locked when vacant.
- Pay attention to unknown persons in and around your lab.
- Report suspicious behavior.

Emergency Procedures
- Follow the SPILL poster steps for dealing with radioactive material spills. Immediately report personal contamination to Radiation Safety.
- Call the 24-hour EHS Emergency line (203-785-3555) for assistance with any radiation incident.

Please see reverse side for personal radiation dosimetry tips and information on response to contamination incidents.

Landauer is Yale University's New Radiation Dosimetry Vendor

Please see below for important information on the new dosimeters:

1. The new dosimeters come with a clip that the dosimeter snaps into. **DO NOT RETURN THIS CLIP.** The clip is re-used from quarter to quarter. Simply remove the dosimeter to be exchanged and send back. Then, snap the new dosimeter into the clip. It is important that the plastic tab is removed to properly install the dosimeter in the holder.

2. To add, alter or cancel a dosimeter, or to ask a question regarding radiation dosimetry (such as: how I report a lost or damaged badge and request a replacement badge) please reach out to dosimetry@yale.edu.

Please watch a short video summarizing the EHS Dosimetry Program, which includes a tutorial on how to assemble the Landauer OSL dosimeter and holder.

PET Isotope Contamination Incidents

It is important for all employees working with PET isotopes to understand appropriate survey and decontamination techniques/processes. Millicurie or high microcurie activities of PET isotopes can very quickly lead to significant shallow skin doses. It is very important to follow proper decontamination procedures if a worker's skin becomes contaminated.

1. If you are contaminated by a known splash, spray, or spill – begin to wash immediately. Ask a coworker to call the EHS emergency line (203-785-3555) so that they can assist in the decontamination efforts. EHS should be called as soon as a contamination incident is known.
   a. When a contamination event is known, it is crucial to remove the material as quickly as possible. Begin washing with whatever you have available. Soap and water will remove most of the contamination quickly. If soap is not available, water and friction from rubbing hands or wiping with a wet paper towel will be effective.
   b. Once you have performed a thorough first decontamination, take a reading with an appropriate radiation measurement device – recording the reading, the time of the reading, and the distance at which the measurement was taken (~6 inches from the skin contamination if using an ion chamber or "on-contact" if using a G-M pancake probe). Ensure that this reading is taken in a low background area,
2. If you discover skin contamination in a post-experiment survey, take the time to record a reading before beginning the decontamination process. This reading, along with an estimate of how long the contamination may have been present, will be used for later evaluations of skin dose.
3. The goal is to reduce the skin contamination to background levels. If the meter readings are decreasing after each wash, continue decontamination efforts until background levels are achieved. Do not abrade the skin. If at a certain point, there is no additional reduction in meter readings after washing the skin, stop decontamination efforts and wait for EHS assistance.

EHS will be holding spill/contamination response drills in Fall 2022 to teach and test on the techniques described above.