

LAB ATTIRE AND PPE	SURVEYS
 • Dress appropriately for work in a lab. Avoid wearing shorts, skirts and sandals. • Wear double gloves, a lab coat and safety glasses when handling radioactive materials. • Keep a spare set of lab shoes in the lab.	 • Perform surveys during and after every use of radioactive material. • Use the correct instrument and survey slowly. • Keep your instrument in good working condition.
SECURITY	INVENTORY
 • Store all radioactive materials securely. • Keep lab doors locked when vacant. • Pay attention to unknown persons in and around your lab. • Report suspicious behavior.	 • Maintain an accurate radioactive material inventory. • Radioactive material use logs can be found at: https://ehs.yale.edu/sites/default/files/files/radioactive-material-use-log.pdf.
RADIOACTIVE WASTE	EMERGENCY PROCEDURES
 • Use the correct containers for rad waste collection. • Segregate properly and don't overfill containers. • Request timely EHS pickups of full waste containers.	 • Follow the SPILL poster steps for dealing with radioactive material spills. Always report personal contamination. • Call the 24-hour EHS Emergency line (203-785-3555) for assistance with any radiation incident.
EHS INTEGRATOR	
 Edit Your PI Profile • Submit Registrations • Update Registrations Resolve Surveys • Request Waste Pickups • Maintain Inventory https://ehsis.yale.edu/EHSIntegrator	

URANYL COMPOUND SAFETY



The frequency of use of uranium compounds for electron microscopy investigations has recently increased. These materials are used due to the high-Z value of the uranium chemical element, which offers improved image contrast in stained samples. Uranium is a naturally occurring radioactive material, with a half-life of 4.5 billion years and a specific activity of 0.36 $\mu\text{Ci}/\text{gram}$. They are frequently received in powder form with Uranyl Acetate being the most popular chemical form. The amount of radioactivity contained in these compounds is very low; however, care should still be taken to minimize the risk of uptake of this alpha emitter.

Safety Information

- Due to the very low external hazard, dosimetry is not required for uranium compound users;
- Wear typical lab PPE when handling uranium compounds (gloves, lab coat, safety glasses) and wash hands after each use;
- Continuously monitor experiments with a GM meter and pancake probe and perform post-experimental and monthly surveys;
- Main radiation hazard: Internal/Inhalation - 4.2 MeV alpha particle;
- Handle powder carefully to prevent airborne particulates;
- If powder spills, use moist absorbent materials to contain and clean up the spill;
- Dispose of waste as radioactive waste and place in the appropriate containers for solid, liquid or sharps radioactive waste. Do not dispose of liquid waste down the drain!
- Store stock vials securely;
- In case of emergency (spill, skin contamination), call Yale EHS emergency line at (203)735-3555 for assistance;
- Keep track of the material used in the lab and submit a radioactive material inventory every six months via EHS Integrator.

Registration and Training

- To register for uranium compound use, a PI may fill out an online application at <https://ehsis.yale.edu/EHSIntegrator>;
- All personnel using uranium compounds should take the two-part radiation safety training class <https://ehs.yale.edu/trainings/radiation-safety-basic-concepts>;
- Purchase uranium compounds using Workday/SciQuest. EHS will issue timely approval of these orders for authorized labs.