



General Safety Regulations for Electron Microscopes

1. Only personnel trained and approved by the responsible Principal Investigator may operate an electron microscope.
2. An operational fail-safe light shall be visible to the operator indicating when x-rays are being produced.
3. Use interlocks, barriers, or administrative controls to ensure no one can gain access to the primary beam or high scatter radiation areas.
4. Use a calibrated GM survey meter to verify shielding effectiveness and monitor radiation levels.
5. Secure electron microscopes against unauthorized use by using a unit key control or the room lock. Stop the primary beam by secured shielding that cannot be readily displaced.
6. Secure unused ports to prevent accidental exposures.
7. Maintain an operating log that includes the date, operator, beam voltage, and current time on and off (or total exposure time).
8. Do not modify the built-in shielding and viewing ports. If modifications must be made, first contact the Principal Investigator followed by the Radiation Safety Officer (RSO) or delegate for a safety survey of the unit. Individuals may not operate an electron microscope in a manner inconsistent with SOPs and safe operating standards.
9. Notify the RSO immediately in the event of any abnormal personnel radiation exposure. If there are any questions or concerns about the functioning of an electron microscope, it must be taken out of service immediately and reported to the Principal Investigator or Authorized Person(s) responsible for the unit.
10. All electron microscope units must be registered with EHS and the California Department of Public Health (CDPH) prior to arrival. Contact EHS prior to any acquisition, transfer, relocation, or disposal of electron microscope units so that the CDPH registration can be updated.
11. In case of emergency or accident, notify the Principal Investigator and EHS immediately at (657) 278-7233. Prevent further use of the unit until a safety evaluation is done.