Electron microscopy sample preparations and instrument operation are performed in a manner that minimizes risk to personnel.

ANP.57070 Hazardous Chemicals **Phase II**

The laboratory safely handles and disposes of osmium tetroxide, epoxy resins, and other hazardous chemicals.

NOTE: Osmium tetroxide is volatile and toxic. Exposure to its vapor can lead to blindness and serious respiratory complications. There must be a clearly stated and posted procedure addressing accidental spillage. Material for dealing with such a spill should be readily available, eg, corn oil and an absorbent such as saw dust. For US laboratories, disposal of osmium tetroxide must be according to OSHA regulations for toxic compounds. Epoxy resins are highly allergenic, and direct contact should be avoided. The laboratory must have documentation that personnel have been trained in the handling of these materials.

REFERENCES
1) Cooper K. Neutralization of osmium tetroxide in case of accidental spillage and for disposal. *Micros Soc Canada Bull.* 1988;8(3):24-28
2) Wenk PA. Disposal of histology stains. *Lab Med.* 1998;29:337-338
3) Clinical and Laboratory Standards Institute. *Clinical Laboratory Waste Management; Approved Guideline.* 3rd ed. CLSI Document GP05-A3. Clinical and Laboratory Standards Institute, Wayne, PA; 2011.

ANP.57100 X-Ray Leakage **Phase II**

The electron microscope is checked for x-ray leakage at the time of installation and after major repair.

NOTE: Periodic monitoring is also required for devices operating at 70,000 volts or above. Records of radiation leakage checks must be retained.

IN VIVO MICROSCOPY (IVM)

This section applies to In Vivo Microscopy (IVM) technologies for clinical practice, in which a physician views digitized or analog video or still image(s) or other data, and renders an interpretation that is included in a formal diagnostic report or in the patient record. The Ex Vivo Microscopy section of this checklist should be used for in vitro applications of these systems.

This checklist section applies to the application of IVM technologies for:
- *Intra-procedural guidance of biopsy or tissue excision*
- *Surgical (intraoperative) guidance*
- *Primary evaluation and/or diagnosis*
- *Screening*
- *Intra- or extra-institutional consultation*
- *Post-procedural evaluation and/or diagnosis*

Examples of IVM technologies include:
- *Confocal microscopy*
- *Optical coherence tomography (OCT)*
- *Multiphoton microscopy*
- *Optical spectroscopy and spectroscopic imaging*

This checklist section is NOT applicable to:
- *Informal reviews without formal reporting*