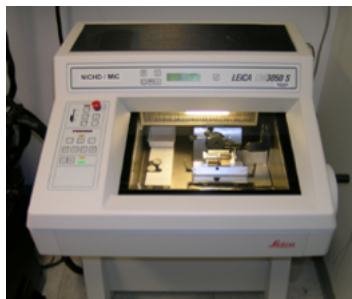


Microtome Use: Hazards and Precautions

Microtome Safety

A microtome is a device that cuts extremely thin sections of tissue for microscopic study. They can be manually operated, semi-automatic or automatic, and can also be referred to as “histomes” and “cryostats.” Microtomes can present a hazard when the sharp blades and foot treadles are uncovered, and accidental activation can lead to finger amputation. In 2008 a health care lab worker in San Diego lost a fingertip while preparing and cutting tissue samples on a microtome. In June 2012, Cal/OSHA established a specific regulation for workers using microtomes.

- Microtomes must be used, operated, and maintained by qualified persons in accordance with the manufacturer’s recommendations and Cal/OSHA standard 3558, <http://www.dir.ca.gov/title8/3558.html> as summarized below.
- Operators must be trained on the safe and proper use of microtomes and on the equipment-specific operation. This fact sheet can serve as general microtome safety training, but microtome users must also get microtome and procedure specific training. The training can be in the form of a written Standard Operating Procedure (SOP). Document the training by attaching a training documentation sheet and having users sign that they have been trained on safe operation. [An SOP template and training documentation sheet can be found here.](#)
- During operation, a minimum clearance of 1 inch must be maintained between the operator’s hands and any moving parts or blade. Utilize point-of-operation guarding, where possible.



Examples of Microtomes

- When placing or retrieving materials under the blade, use appropriate tools so that your hands remain in the clear.
- Operators must use equipment-specific lockout/tagout procedures, <http://ehs.berkeley.edu/hs/88-energy-isolation-lock-outtag-out.html>, when performing maintenance on electrically-powered and manual microtomes, to avoid accidental release of hazardous energy.

- Wherever applicable, the foot pedal must be positioned to avoid accidental activation during operation. Moreover, the foot pedal of each electrically powered microtome must be guarded by a cover or guard that will prevent unintended operation.
- In the case of ultramicrotomes, care should be exercised when working with razor blades or glass knives. Dispose of these blades or knives in appropriate sharps containers.
- Leaving unattended knives in the microtome holder is a common cause of injury, thus unused knives should be removed from the holder.



Guarded Foot Pedal

Resources

The Cal/OSHA regulation on Microtomes is found at:

<http://www.dir.ca.gov/title8/3558.html>

Examples of foot pedal guards can be found on the internet here:

<http://www.grainger.com/Grainger/foot-switch-guards/switches/electrical/ecatalog/N-8fx>

Questions?

If you have questions or concerns regarding safe use of microtomes, contact EH&S.