TEXAS A&M UNIVERSITY SAN ANTONIO
Research and Academic Environmental Health & Safety

Fact Sheet:

Microtome & Cryostat – Safe Use and Operation

Microtomes are instruments used to section tissues (5-10 microns thick) at room temperature. Like a standard microtome, a cryostat cuts thin sections off tissue (1-10 mm in thickness) but at a low, cold temperature (-20 to -30°C).

Risks Identified

- Lacerations from sharp blades
- Exposure to biological hazards or bloodborne pathogens from unfixed tissues
- For cryotomes: burns from extended contact with the cold

Safe Operating Procedure

- Don appropriate PPE before starting work: lab coat, eye protection, nitrile gloves, cut-resistant gloves and cryogenic gloves (if using a cryostat)
- Lock the wheel in place before manipulating specimen
- Place a new blade in the holder. Remove any old blades with forceps or cut-resistant gloves. Never use your fingers.
- If tissue block is not lined up with the blade, ensure that the wheel is locked in place and the roll guard is flipped over to cover the blade before manipulating specimen

Cleaning the Blade

- Wear cut-resistant gloves
- Never use your fingers to clean the blade – always use forceps
- Wipe down the outside of the machine with 70% ethanol. Use 1-2% alconox solution to clean the blade.
- Keep blade in an appropriate cut-resistant container when not in use.

AVOIDING COMMON INJURIES

- Always wear appropriate PPE.
- Keep fingers away from the blade at all times!
- All users must be appropriately trained before operating the machine

References

1. Stanford Microtome Fact Sheet https://ehs.stanford.edu/reference/microtome