

Centrifugation

This SOP applies to centrifugation of biohazardous materials in UMass Amherst facilities.

Centrifugation generates aerosols and distorts primary containers, allowing aerosols to spread. Centrifuging biohazardous materials without an aerosol containment method exposes personnel and the environment to potentially infectious airborne droplets. To contain aerosols, centrifuges are placed inside aerosol containment devices (e.g., biosafety cabinet or chemical fume hood), or aerosol-tight containers (with gaskets/O-rings) are used to contain samples and opened only inside an aerosol containment device.

Procedure:

1. Prepare samples in centrifuge tubes inside a BSC
2. Disinfect sample tube exteriors before removing from the BSC or load inside the BSC
3. Load centrifuge tubes into aerosol-tight safety cups or an aerosol-tight rotor and securely fasten the lid
4. Perform the centrifugation run
5. Check for leaks or spills after the centrifuge comes to a complete stop
6. Remove the safety cups or rotor from the centrifuge without breaking the aerosol-tight seal
7. Transfer the aerosol-tight container to the biosafety cabinet
8. Remove samples from the safety cup or rotor
9. Disinfect the interior and exterior of the safety cup/rotor following the Decontamination SOP

Cautions & Considerations

- If the centrifuge is inside an aerosol containment device, aerosol-tight containers are not required
- If primary centrifuge tubes are aerosol tight (i.e., have O-rings), safety cups are not required

- Examine O-rings before use for damage (e.g., cracks, deformities) and replace if needed
- Ensure that tubes are balanced and not over-filled
- Stop the centrifuge immediately if you notice any unusual noises or shaking
- Document regular disinfection of centrifuges in a maintenance log
- Disinfect centrifuges before repair or maintenance activities, and document maintenance in the log

Resources

- [BMBL 5th Edition](#)