

Aerosol Generating Equipment

This SOP applies to aerosol-generating procedures with biohazardous materials in UMass Amherst facilities. Many common laboratory and teaching procedures, including sonication, homogenization and vortexing, generate aerosols, potentially exposing personnel and the environment to infectious airborne droplets. To contain aerosols, procedures are conducted 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. Load sample(s) into aerosol-tight container(s) (primary or secondary) inside a BSC
2. Disinfect container exterior(s) before removing from the BSC
3. Conduct the aerosol-generating procedure according to the lab-specific protocol
4. Check for leaks or spills
5. Transfer the aerosol-tight container(s) to the BSC
6. Disinfect the container(s) following the Disinfection SOP

Cautions & Considerations

- If aerosol-transmissible pathogens are in use, additional precautions are required
- If equipment is inside a BSC and procedures are performed within the BSC, aerosol-tight containers are not required
- Examine O-rings before use for damage (e.g., cracks, deformities) and replace if needed
- Do not overtighten lids with O-rings, as this will cause them to warp
- Ensure that tubes are not over-filled
- Screw-top tubes are preferred to flip-top tubes to minimize generation of splashes

- Document regular disinfection of equipment in a log
- Disinfect equipment before repair or maintenance activities, and document maintenance in a maintenance log

Resources

- [Biosafety Manual](#)
- [BMBL 5th Edition](#)