



- blowing out pipettes
- cell sorters
- shaking or vortexing tubes, stirring
- opening lyophilized cultures, opening snap top tubes, breakage of culture containers
- flaming loops or slides
- pulling needles out of septums, filling a syringe
- pouring liquids
- centrifugation steps such as filling centrifuge tubes, removing plugs or caps from tubes after centrifugation, removing supernatant, resuspending sedimented pellets, breakage of tubes during centrifugation, and centrifugation itself
- sonication, homogenization, blending, grinding, cell disruption with French press
- intranasal inoculation of animals
- cage cleaning, changing animal bedding
- harvesting infected material from animals, eggs, and other virology procedures
- necropsies of infected animals

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Using a combination of the appropriate safety equipment and safe procedures is the primary method to minimize the creation of and exposure to aerosols.

Lab safety equipment to protect personnel from aerosols

• The certified biological safety cabinet "class # or #2" is the primary barrier to protect worker from aerosols. Other safety devices include safety centrifuges with automatic locking mechanisms or solid lids, safety centrifuge cups, safety blenders, safety sonicators.

• If aerosol production cannot be prevented or contained, see the [U.S. OSHA Safety and Environmental Health Administration \(OSHA\) Compliance to determine if use of a respirator is appropriate.](#)

• For animal work follow OSHA's *Biosafety in Microbiological and Biomedical Laboratories* (BMBL) 5th Edition, Appendix A.