

## **11.0 BIOLOGICAL SAFETY CABINETS**

Biological safety cabinets are required for any work that generates aerosols at BSL 2 or with RG 2 agents. Activities that generate aerosols include pipetting, blending, centrifuging, etc. Biological safety cabinets (or biosafety cabinets, or BSCs) provide protection to the user, the environment and to the work inside the cabinet by filtering the air through HEPA filters. There are also other laminar flow hoods available, such as clean benches, that provide protection for the work being performed, but do not protect the user or the environment; these are not BSCs. For a full description of BSC operation, selection and use, see the CDC publication "[Primary Containment for Biohazards: Selection, Installation and Use of Biological Safety Cabinets](#)". In general, a class II cabinet is required for BSL 2 or RG 2 work at Ohio University. See below for an overview of BSC use procedures.

### **OPERATION OF CLASS II BSCs**

- 1) Turn on cabinet fan 15 minutes before beginning work. (If the optional UV light is on, turn it off before proceeding to step 2.)
- 2) Disinfect the cabinet work surface with an appropriate disinfectant.
- 3) Place all work supplies inside the cabinet, including any containers needed for disposal. Movement of hands in and out of the cabinet can spread contamination or create turbulence that affects the BSC performance. Do not block the BSC's air grills.
- 4) Wait 2-3 minutes to purge any contaminants.
- 5) Keep all work items at least 4 inches back from the edge of the cabinet. Set-up and conduct work from the clean to the contaminated areas of the cabinet in order to protect the work being conducted.
- 6) Open flames should not be used in the biosafety cabinet because they disrupt the air flow and pose a fire hazard that could damage the cabinet's HEPA filter. Alternate methods such as disposable inoculating loops are recommended. If a flame is necessary, a touch-plate micro burner with a pilot light or electric incinerator must be used.
- 7) When work is completed, wipe all surfaces both of the cabinet and of any equipment, with appropriate disinfectant.

Most BSCs at Ohio University vent filtered air into the laboratory. The filters remove particles, such as viruses and bacteria. The filters do not remove vapors or gases. Therefore, laboratory-venting BSCs must not be used for hazardous chemical work. In

some cases, BSC can be vented outside of the building to allow for work with hazardous chemicals.

BSCs require regular certification and maintenance by certified technicians. Certification is required upon installation, after major repairs, when moved and at least annually. The certification must be conducted in accordance with the National Sanitation Foundation, Standard 49. The laboratory or department is responsible for scheduling and funding certification, repairs and filter changes. Contact EHS for information on certified technicians. The BSC will occasionally need to be decontaminated by a certified technician, such instances may include: prior to major repairs, prior to moving, or in cases of large spill or gross contamination. Contact EHS for more details about BSC decontamination.