

OCRS Biosafety Guidelines: Maintaining, Moving & Transferring Class II Biological Safety Cabinets (BSCs)

This document is intended to provide Vanderbilt lab personnel with information about Class II biosafety cabinet (i.e., "BSC") practices related to maintenance over their service life.

Acquiring a Class II biological safety cabinet (BSC)

There are several ways for a lab to acquire a biosafety cabinet but regardless of how it's acquired, there are some basic considerations to keep in mind:

- **If you need a Class II BSC, assure that you are getting a Class II BSC.** Laminar flow cabinets or "hoods" that blow air over the work surface and out into the room are not designed to provide personnel protection against hazards, and therefore are not Class II BSCs. If you need help in determining if a device is a Class II BSC, please contact OCRS Biosafety (322-2057) for assistance.
- **If you are buying a used BSC, make sure it is in good repair.** Biosafety cabinets, especially older ones, are costly to repair and parts may be difficult to replace. Request service records and verification that the filters have been gas decontaminated after last use (if the filters are present) for the BSC before committing to purchase.
- **Place your BSC in a "dead space" in the lab to maximize performance.** A BSC does not pull as much air as a chemical fume hood. Sources of air turbulence such as opening/closing doors, busy walkways, air vents overhead, etc. will make it difficult for your BSC to function effectively.
- **Do not install a gas line unless you have consulted with OCRS Biosafety.** Because of the recirculating air configuration of the BSC, a gas line inside a BSC can lead to explosions in the event of a leak. Contact Robin Trundy (322-0927) to discuss your procedures needs and for assistance in identifying alternatives if you feel you need a gas line.
- **Get your BSC certified before using it.** BSC certification is a testing process that is used to determine that a BSC is functioning properly and that there are no leaks in any of the plenums that could lead to personnel or product contamination. Contract professionals are available who can perform BSC certifications and service. OCRS Biosafety recommends that you use a contractor that is an NSF Accredited Class II Biosafety Cabinet Field Certifier. Accredited certifiers that serve Tennessee can be found at this [NSF link](#). Also, you must receive a Purchase Order number prior to getting your BSC certified. Visit [Vanderbilt Finance](#) or [VUMC Finance](#) for further information on the purchase order process. **NOTE:** If you "inherit" a biosafety cabinet with a lab space, you should assure that the BSC has been certified in the last 12 months before using it. Cabinet certifiers typically place a certification expiration sticker on the front panel of the BSC above the sash.

Maintaining a biological safety cabinet

Whether new or used, proper maintenance of your BSC will go a long way in assuring effective use of the containment device:

- **Maintain the certification schedule for your BSC.** Cabinets must be certified when first installed, at least annually, after filter replacement, and after being moved (unless the BSC is on wheels and moved only in the lab area). OCRS Biosafety recommends that you use a contractor that is an NSF Accredited Class II Biosafety Cabinet Field Certifier. Accredited certifiers that serve Tennessee can be found at this [NSF link](#). Also, you must receive a Purchase Order number prior to getting your BSC certified. Visit [Vanderbilt Finance](#) or [VUMC Finance](#) for further information on the purchase order process.
- **Use surface-friendly disinfectants to avoid damaging BSC surfaces.** Ethanol is surface-friendly but it is not EPA rated for destruction of HIV & HBV and therefore cannot be used as a stand-alone disinfectant for use with human cells. While bleach solutions (1:10 to 1:100) are EPA-rated disinfectants, bleach residues will damage the cabinet unless removed after contact time. Therefore, OCRS Biosafety recommends that you select a product that is both EPA-rated for destruction of HIV & HBV, is pH neutral and is formulated to be compatible with stainless steel.
- **Don't use flames in the BSC unless absolutely necessary.** Open flames will damage the HEPA filter and create turbulence in the work space that can lead to migration of contaminants into or out of the BSC. Contact Robin Trundy (322-0927) to discuss your procedures needs and for assistance in identifying alternatives if you feel you need to use open flames.

- **Disassemble and clean the BSC on a routine basis to eliminate contaminated residue buildup.** All BSCs have a tray under the work space where the return air passes on its way to the HEPA filter. Any debris present in the BSC will eventually be carried along with this air and may settle out in this tray. Any spilled materials may also end up in this tray. Over time, the built up contaminants may start to “grow”, which could lead to product contamination. OCRS Biosafety recommends that BSC work spaces be disassembled at least once a year in order to access and clean the tray. It is best to do this just prior to the scheduled BSC certification in order to minimize down time for the lab and also to assure that the BSC is thoroughly cleaned before the certifier is handling the device.

Relocating or Disposing of a biological safety cabinet

Because of the size and weight of BSC’s, there are specific considerations that apply to moving BSC’s in order to assure that this is achieved safely and without spreading contaminants.

- **Gas decontamination is necessary under certain circumstances in order to prevent spread of infectious contaminants and protect personnel involved in BSC disposal roles. These include:**
 - A BSC is being moved out for disposal (i.e., via demolition/reconstruction waste, [VU Plant Operations Surplus](#), [VUMC Facilities Management Surplus](#))
 - A BSC that has been used for work with infectious agents (i.e., those that are considered Risk Group 2 or higher) is being moved from the current lab space to a different lab space
 - A BSC is being moved to a different lab space and has an incomplete history of use for the currently installed HEPA filters.

NOTE: A copy of the BSC certifier’s decontamination report MUST be posted on the BSC or it CANNOT be moved! If you do not believe your BSC move situation fits in to one of these categories contact Robin Trundy to determine what actions are needed to safely move your BSC.

Gas decontamination procedures are also covered by the National Sanitation Foundation Standards and therefore OCRS Biosafety recommends that you use a contractor that is an NSF Accredited Class II Biosafety Cabinet Field Certifier for gas decontamination activities. Accredited certifiers that serve Tennessee can be found at this [NSF link](#).

When gas decontamination is needed, it must be scheduled at a time when the lab is empty. Please notify OCRS Biosafety (322-2057) in advance of scheduled gas decontamination activities.

- **Don’t try to move a BSC yourself!** Biosafety cabinets can weigh upward of 600 pounds and moving them without the proper equipment is unsafe for personnel and can damage the BSC. Utilize Vanderbilt’s resources that are available and have the proper equipment for this purpose. If your cabinet has been gas decontaminated, the certifier will post a decontamination notice on the BSC. Leave this on the cabinet so that those moving it know that it is safe to handle.

Leaving a BSC behind?

- **Clean and disinfect all accessible surfaces of the BSC if leaving the cabinet behind in a lab space you are vacating.** All accessible surfaces of lab equipment that may have been contaminated with biological materials must be thoroughly cleaned and disinfected before it is passed on to the new occupants or handled by movers. Contact OCRS Biosafety to generate a biosafety equipment release posting for the BSC.
- **If you will be transferring ownership to someone else at Vanderbilt and they plan to move it to their lab space, follow the practices outlined under the previous section.**

For more information regarding biosafety cabinets and other biosafety practice topics, please visit the [OCRS Biosafety webpage](#) or contact the OCRS Biosafety Team at 322-2057.

For specific inquiries related to the content of this document, please contact:
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