

**Safe Science =
Good Science**
November 11, 2022

Biosafety Cabinets:

1. Protect personnel from exposure
2. Protect the workspace from outside contamination
3. Prevent release of the agent to the environment

**How to Properly Use
Biosafety Cabinets:**

- Do not use the top of the cabinet for storage; this can damage the HEPA filter.
- Keep only necessary equipment or supplies inside the BSC. Do not block the front or back grilles.
- Wear personal protection equipment (PPE):
 - Lab coat
 - Gloves
 - Safety glasses
- Place materials in the cabinet before beginning work if possible

Improper use of a biological safety cabinet can result in contaminated cultures and expose workers to infectious organisms.

For questions or concerns please call DEHS at 852-6670 or email dehsubm@louisville.edu

Biosafety Cabinet Safety

Biosafety Cabinets (BSCs) are enclosed workspaces with a ventilated hood designed to contain pathogenic microorganisms during microbiological processes. The primary purpose of biosafety cabinets is to protect the laboratory personnel and the environment from pathogenic microorganisms as aerosols might be formed during the processing.

Biosafety cabinets are used for certain risk group organisms and processes that may result in aerosol formation. Cabinets are provided with HEPA-filters that decontaminate the air moving out of the cabinet work area. **Biosafety cabinets are classified into three classes:**

- **Class I** – Only provides protection for personnel and environment. Does not offer product protection. Typically used in BSL-1 and -2 laboratories.
- **Class II** – Provides product, personnel, and environmental protection. Typically used in BSL-2 and -3 laboratories.
- **Class III** – Entirely gas-tight enclosed cabinets, also known as glove boxes, are typically used with highly infectious agents at RG-3 and -4 and utilized in BSL-3 or -4 laboratories.

Biosafety Cabinets



Horizontal or Vertical flow clean benches (clean air devices) only provide protection to sample materials or products and do not provide protection to personnel or the environment.

Workflow

To prevent cross-contamination and a disorganized workspace, work in one direction. “Clean to Dirty” or “Dirty to Clean”.

Split your workspace into three designated areas:

1. Clean/Unused items
2. Work/Manipulation Space
3. Used/Waste items

Follow the “nose technique”: your hands should never cross the midline of your body. Your left-hand grabs items on the left side and the right hand puts waste in waste containers.

