STANDARD OPERATING PROCEDURE

Biological Safety Cabinet

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Minimum Personal Protective Equipment Required: Appropriate gloves, lab coat, long pants, and closed-toe shoes.

Risks: Incorrect use of BSC or using the wrong type of BSC could expose user to pathogens in cultures or samples being worked on.

Special Handling:

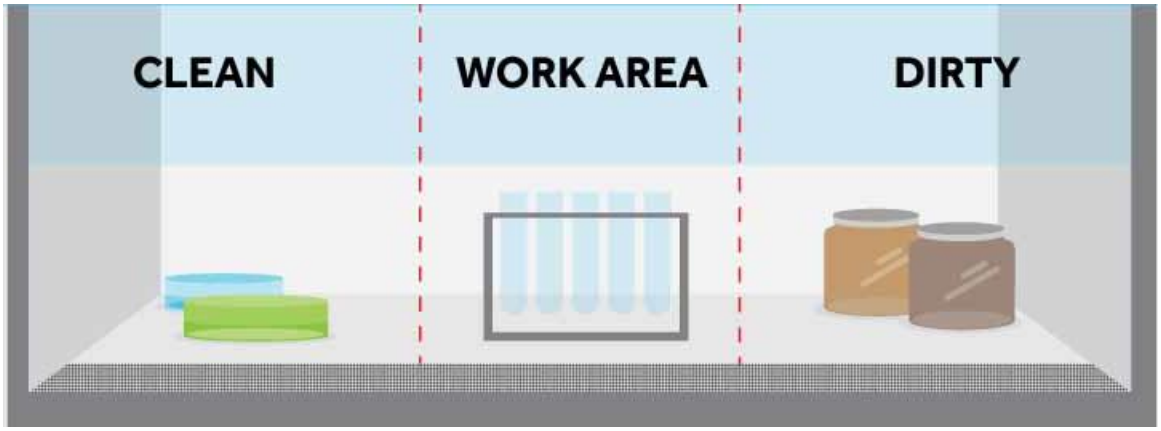
- ✓ Do not use an open flame in the BSC
  - Open flames create significant turbulence that disrupts the laminar air flow in a BSC
  - An open flame in the presence of 70% ethanol is a fire risk
- ✓ Keep vents and front and rear of biohood clear and free of paper or other debris as these can compromise the BSC's airflow and lead to potential contamination issues or personnel exposure concerns.

Protocol/Procedure:

1. Make sure the biohood is clean and organized. Store a minimum amount of supplies in the hood. When too much space is taken up, the air flow can be disrupted.
2. Turn on blower and allow to run for 3-5 min to ensure aseptic conditions
3. Wipe down the surface with 70% ethanol
4. Drop the sash, turn the UV light on to disinfect hood interior. The UV light should remain on for at least 12.5 min to inactivate spore forming organisms[1].

   The sash must be all the way down for the UV to work. It may need extra effort to get the sash to stay down.
5. When beginning to work, make sure sash is at the proper height. There are marks on the hood indicating the correct height and the hood will not work if the sash is not at the correct height.
6. Perform all operations on the work surface and at least 4 inches from the front grille
7. Use slow, steady movements as rapid movements will disrupt the air curtain. Avoid moving arms in and out of the cabinet during your experiment and try to minimize activities that can cause eddy currents. Small pockets of turbulence can compromise air circulation in the BSC.

8. Work from clean to dirty. Organize your supplies so that you can segregate your work from the clean side of the cabinet to the dirty side. Avoid moving dirty items over clean ones to prevent cross-contamination of your experiment.



9. When work is completed, remove any samples, supplies, or trash from the hood and place in their appropriate location.
10. Wipe down the surface of the hood with 70% ethanol
11. Drop the sash, turn the UV light for at least 12.5 min

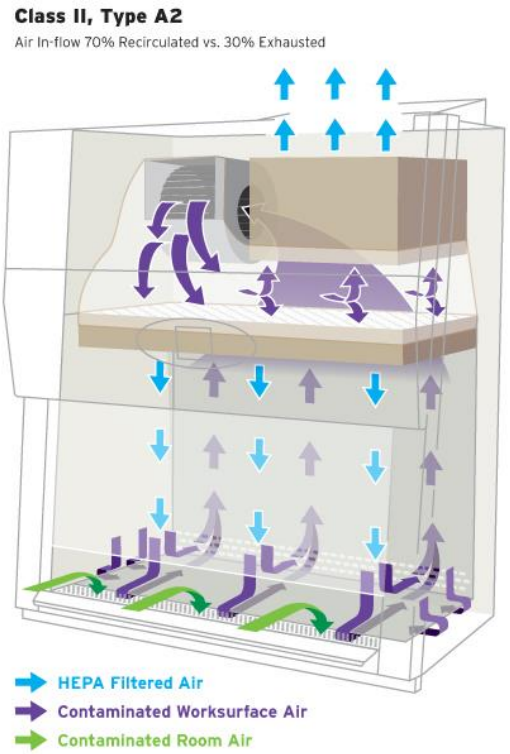
Understanding How a Biosafety Cabinet Works:

Biological safety cabinets (biohoods) are designed to protect laboratory workers from harmful biological material that may be present in a sample or culture. Some types of biohoods can also protect the process being performed in the hood from outside contamination.

Class II biohoods protect both the worker and the process. Room air is drawn in from the top of the hood, through a HEPA filter to remove contaminants from the air, and then out through vents along the bottom edges of the work surface to prevent the worker from being exposed to any pathogens that may be present in samples being worked on.

Room air is prevented from entering the front of the hood by vents directly in front of the work area, protecting the process from outside contamination.

Disruption of the airflow by obstruction or turbulence can inhibit effective functioning of the biohood.



[1]Meechan PJ and C Wilson. 2006. Use of Ultraviolet Lights in Biological Safety Cabinets: A Contrarian View. Appl Biosaf. 11(4):222-227