

SAFE OPERATING PROCEDURE

BIOLOGICAL SAFETY CABINET

Purpose:

To provide safe operation and instruction on the use of biological safety cabinets for the handling of biohazardous materials.

Application:

All users of biological safety cabinets should be familiar with the procedures outlined below. Biosafety cabinets are used to control exposure to potentially hazardous biological materials (i.e. containment level 2 agents) when performing activities that have may generate aerosols.

Safety Precautions:

All operators must receive training on the safe use of the biosafety cabinet (BSC) prior to using the equipment. It remains the responsibility of the supervisor to ensure their personnel are adequately trained in accordance with biosafety and laboratory safety guidelines.



Do not use biosafety cabinets when handling toxic, volatile or flammable materials.



Do not use open flames inside the cabinet at any time.



The UV light must be turned off when the cabinet is in use.

Note:

- Consult EHS before relocating biosafety cabinets or obtaining new cabinets.
- Review the manufacturer's instructions prior to using equipment.

Operating Procedure:

Preparation:

- Plan experiments to ensure all required items are present from the start to reduce in/out time in the BSC.
- Ensure personal protective equipment is worn (lab coat, gloves, and eye protection).
- Ensure the hood certification is up to date. If hood certification has expired, do not use the hood – call EHS (x53282) and request recertification.
- Turn off the UV light.

- Turn on fan (if switch-operated) and work light, and verify airflow using display or a kimwipe on intake vent.
- Allow 5 minutes for airflow to stabilize.
- Use 70% ethanol or another suitable chemical disinfectant to disinfect the interior surfaces of the cabinet as well wipe bottles of media and disinfect with 70% ethanol before placing in the BSC.
- Retrieve required materials from storage locations ie. Water bath, incubators). Use a cart or tray when retrieving multiple items.
- Ensure you have the supplies you need for disposing of waste and plastic consumables in addition to materials for cleanup procedures in the event of spillage.
- ✓ Have containers or bags available within the hood for temporary storage of wastes. This prevents in-and-out movements from the cabinet that disrupt the airflow protecting the user.
- Have paper towel, chemical disinfectant, forceps and autoclave bags available in case a spill occurs inside the cabinet (See CBS SOP on Biohazard Spills for further details)

Working in the BSC:

- Arrange items as near to the back of the hood as possible without obstructing the air vents at the rear.
- Work cautiously to avoid generation of aerosols and minimize disruptions of airflow. Avoid moving arms or items in and out of the hood as much as possible.
- Avoid moving hands, pipettes, or other items over open containers or plates to avoid cross-contamination.
- Monitor airflow throughout your work – if unusual variations appear, close all open containers and lower the sash.
- When finished, close all containers (culture dishes, flasks, etc.).
- Wipe down all items (including waste bags, all containers, pipettors, instruments) with 70% ethanol or another suitable chemical disinfectant prior to removing them from the hood.
- Disinfect the interior of the hood with a suitable chemical disinfectant ie. 70% ethanol.
- Allow fan to operate an additional 5 minutes to clear cabinet of contaminants.
- Turn off work light and fan (if switch operated) and turn on UV light for 20 minutes.
- Remove/change gloves, and wash hands thoroughly.

Contingency Plans:

Spills:

- If a spill occurs within the biosafety cabinet
 - Refer to the CBS SOP on Biohazard Spills
 - Keep the fan operating, and cover the spill with absorbent material.
 - Soak the area in a suitable chemical disinfectant, and leave undisturbed for 20 minutes.
 - Place absorbent materials used in clean in biohazard waste bag.
 - Use a paper towel soaked in chemical disinfectant to clean the interior of the hood, including the tray under the work surface.
 - Allow cabinet to run for an additional 10 minutes.
 - Report the spill to your supervisor and EHS.

Equipment failure:

- If a fan stops working:
 - Immediately stop all work and close all open containers within the hood.
 - Close the sash fully.
 - Remove lab coat and gloves, and thoroughly wash hands.
 - Wait 30 minutes for aerosols to settle.
 - Use a suitable chemical disinfectant, and cautiously wipe down the exterior of all items before removing from hood.
 - Do not attempt to reuse the biosafety cabinet the problem is fully resolved.

