



STANDARD OPERATING PROCEDURE: Routine Maintenance of Biosafety Cabinet (BSC)

1. Purpose:

To provide instruction on how to properly clean BSC.

2. Scope:

Applies to everybody working in DB440.

3. Prerequisites:

WHMIS, EHS601 Laboratory Biosafety, DB440 SST

4. Responsibilities:

Principal investigators are responsible to enforce this SOP and lab-personnel are responsible to comply.

5. Personal Protection Equipment (PPE):



6. Procedure:

For Labconco BSC

The following should be done every 6 months:

- 1) Make sure BSC is empty of any items, equipment, or waste containers.
- 2) Allow the cabinet to operate for 5 minutes with no activity, which should purge airborne contaminants from the work area.

- 3) Wet wipe the top surface of the outside edge of the BSC and front grille a total of 3 times with the pre-soaked paper towels with 1% sodium hypochlorite. Place used paper towels into waste bag.
- 4) Decontaminate work surface before removing it from the cabinet by spraying/wiping with 70% ethanol.
- 5) Remove work surface:



- a. Lift the front edge of the work surface straight up by grasping the knob handles at either front corner.
- b. Pull the work surface straight out, letting its rear edge rest on the center support underneath.

Prop-Up Work Surface

- 6) This procedure must be performed with a partner. This procedure must be listed in your 'working alone policy/procedure' for your laboratory or area.
- 7) With a partner, lift up the work surface and prop it up securely. Refer to image below.



- 8) The prop should be something that is strong enough to hold up the metal surface and wide enough that it will not slide and let the surface fall.

Cleaning Front Grille

- 9) At one end of the grille, grip the front of the grille with one hand, and the back with the other hand. Pivot that end of the grille upward and inward, paralleling the angle of the sash.
- 10) Pull the other end of the grille up and away from the bottom edge of the cabinet.
- 11) Wet-wipe the underside of the grille for a total of 3 times with pre-soaked paper towels. Place used paper towels into waste bag.
- 12) Scrub any gross contamination remaining on the grille with appropriate scrubbing tool. Remove all loosened debris by wet-wiping another three times.
- 13) Spray/rinse with water to remove sodium hypochlorite residue.
- 14) Spray top of grille and underside of grille thoroughly with 70% ethanol. Let sit for 5 minutes.

Cleaning Work Surface

- 15) Thoroughly spray the underside of the work surface with 70% ethanol. Let sit for 5 minutes.
- 16) Assess the underside of the work surface and clean any gross contamination present by wet-wiping 3x the entire surface with paper towels pre-soaked with decontamination solution. Rinse by wet-wiping with paper towels pre-soaked with tap water if necessary.
 - o Tongs or another long reaching tool is recommended to clean hard to reach surfaces.
- 17) Collect all paper towels into a bag.

Cleaning BSC Catchbasin

- 1) Using a flashlight and an extendible mirror, examine the extent of cleaning required. Note any sharps or broken glass.
- 2) Saturate the entire surface of the catch basin by misting with decontamination solution to prevent fly away debris. You want to capture as much solid material and not let it get sucked up into the HEPA filters.
- 3) Let sit for 5 minutes, keep spraying, do not let it dry out
- 4) Using an appropriate tool (such as: tongs, plastic scraper, mini dustpan, toilet brush or long handled scrub brush) remove as much loose solid material, sharps or broken glass. Place sharps or broken glass into a sharps container.
- 5) Collect debris into a plastic bag inside the BSC if you are positive no sharps are present. If the debris contains sharps that you cannot pick out, place the wet, sharps-containing muck into a wide mouth sharps container.
- 6) For dried on gross contamination, scrub catchbasin with a plastic scrub brush. A toilet brush is ideal because of the long handle.
- 7) Place paper towels soaked in decontamination solution in the catchbasin. Make sure to cover entire surface.

- 8) Let sit for 15 minutes or the recommended contact time for the decontamination solution. Remove paper towels and dispose of in regular waste bins.
- 9) Repeat steps 6 to 8 to ensure all debris is removed.
- 10) Rinse catchbasin with tap water three times. **Failure to thoroughly rinse corrosive chemicals will result in damage to the entire catchbasin.**
- 11) Spray catchbasin with 70% ethanol and let it air dry.
- 12) Replace front grille by **reversing** the following sequence, ensuring that the grille properly engages the bottom edge of the cabinet: At one end of the grille, grip the front of the grille with one hand, and the back with the other hand. Pivot that end of the grille upward and inward, paralleling the angle of the sash. Pull the other end of the grille up and away from the bottom edge of the cabinet.
- 13) Replace work surface by resting the bottom on the center rail while pushing it back into the cabinet. Be sure to engage the tabs on the back corners of the work surface with the slots on the rear wall of the work area.
- 14) Take care when handling paper towel when the BSC is on. They can get sucked up into the HEPA filter and you will have to have it removed.

Cleaning the Rest of the BSC

- 1) Surface disinfect using 70% ethanol to decontaminate all interior work surfaces, making sure to clean the back and side of the cabinet (sidewalls, back wall), inside of sash (interior of the glass), and work surface.
- 2) If using a chloride type disinfectant, after contact time, wipe down interior surfaces with a 70% alcohol solution to protect stainless steel interiors from corrosion.
- 3) The drain pan should be emptied into a collection vessel containing disinfectant; and the drain valve can be disinfected using a flexible tube.
- 4) Any spilled fluid and disinfectant solution on the work surface should be absorbed with paper towels and discarded into a biohazard bag.
- 5) Hands should be washed whenever gloves are changed or removed
- 6) If necessary, the cabinet should also be monitored for radioactivity and decontaminated when necessary.

For Nuaire BSC

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- 2) Allow the cabinet to operate for 5 minutes with no activity, which should purge airborne contaminants from the work area.

3) Cleaning front grille:



Figure 1

- Wet wipe the top surface of the outside edge of the BSC and front grille a total of 3 times with the pre-soaked paper towels with 1% sodium hypochlorite. Place used paper towels into waste bag.
- Remove the grille, turn upside down and place onto the work surface.
- Wet-wipe the underside of the grille for a total of 3 times with pre-soaked paper towels. Place used paper towels into waste bag.
- Scrub any gross contamination remaining on the grille with appropriate scrubbing tool. Remove all loosened debris by wet-wiping another three times.
- Spray/rinse with water to remove sodium hypochlorite residue.
- Spray top of grille and underside of grille thoroughly with 70% ethanol. Let sit for 5 minutes.

Prop-Up Work Surface

- This procedure must be performed with a partner. This procedure must be listed in your 'working alone policy/procedure' for your laboratory or area.
- With a partner, lift up the work surface and prop it up securely. Refer to images below.



Figure 2



Figure 3



Figure 4

- The prop should be something that is strong enough to hold up the metal surface and wide enough that it will not slide and let the surface fall.
- Thoroughly spray the underside of the work surface with 70% ethanol. Let sit for 5 minutes.
- Assess the underside of the work surface and clean any gross contamination present by wet-wiping 3x the entire surface with paper towels pre-soaked with decontamination solution. Rinse by wet-wiping with paper towels pre-soaked with tap water if necessary.
 - Tongs or another long reaching tool is recommended to clean hard to reach surfaces.
- Collect all paper towels into a bag.
- Make note of Figures 2-4 above for following instructions.

Cleaning BSC Catchbasin



Figure 5- work surfaced propped up and front grille removed

- 1) Using a flashlight and an extendible mirror, examine the extent of cleaning required. Note any sharps or broken glass.
- 2) Saturate the entire surface of the catch basin by misting with decontamination solution to prevent fly away debris. You want to capture as much solid material and not let it get sucked up into the HEPA filters.
- 3) Let sit for 5 minutes, keep spraying, do not let it dry out
- 4) Using an appropriate tool (such as: tongs, plastic scraper, mini dustpan, toilet brush or long handled scrub brush) remove as much loose solid material, sharps or broken glass. Place sharps or broken glass into a sharps container.
- 5) Collect debris into a plastic bag inside the BSC if you are positive no sharps are present. If the debris contains sharps that you cannot pick out, place the wet, sharps-containing muck into a wide mouth sharps container.
- 6) For dried on gross contamination, scrub catchbasin with a plastic scrub brush. A toilet brush is ideal because of the long handle.
- 7) Place paper towels soaked in decontamination solution in the catchbasin. Make sure to cover entire surface.
- 8) Let sit for 15 minutes or the recommended contact time for the decontamination solution. Remove paper towels and dispose of in regular waste bins.
- 9) Repeat steps 6 to 8 to ensure all debris is removed.
- 10) Rinse catchbasin with tap water three times. **Failure to thoroughly rinse corrosive chemicals will result in damage to the entire catchbasin.**
- 11) Spray catchbasin with 70% ethanol and let it air dry.
- 12) Replace work surface
- 13) Replace front grille
- 14) Take care when handling paper towel when the BSC is on. They can get sucked up into the HEPA filter and you will have to have it removed.

Cleaning the Rest of the BSC

- 1) Surface disinfect using 70% ethanol to decontaminate all interior work surfaces, making sure to clean the back and side of the cabinet (sidewalls, back wall), inside of sash (interior of the glass), and work surface.
- 2) If using a chloride type disinfectant, after contact time, wipe down interior surfaces with a 70% alcohol solution to protect stainless steel interiors from corrosion.
- 3) The drain pan should be emptied into a collection vessel containing disinfectant; and the drain valve can be disinfected using a flexible tube.
- 4) Any spilled fluid and disinfectant solution on the work surface should be absorbed with paper towels and discarded into a biohazard bag.
- 5) Hands should be washed whenever gloves are changed or removed
- 6) If necessary, the cabinet should also be monitored for radioactivity and decontaminated when necessary.

7. References:

- [10 Step Guide for Biological Safety Cabinet Decontamination | LabRepCo](#)
- [Checklist for Safe Use of Biological Safety Cabinets | CDC Division of Laboratory Systems](#)
- [BSC Labconco Users Manual](#)