



## TEN EASY STEPS FOR CLEANING A SPILL IN THE BIOSAFETY CABINET



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For over 40 years, NuAire has been providing laboratory equipment that better enables researchers to work under defined environmental conditions. A biosafety cabinet or biological safety cabinet (BSC) is an enclosed, ventilated laboratory workspace for users to safely handle materials that might contain pathogens. There are several different models of BSCs, which are differentiated by the user's experimental focus and the degree of bio-containment required.

The primary purpose of a BSC is to protect the laboratory worker and the surrounding environment from pathogens such as bacteria and viruses being used within the cabinet. All exhaust air is filtered through HEPA-filters as it exits the biosafety cabinet, removing the harmful pathogens. Most classes of BSCs have a secondary purpose that is to maintain the sterility of materials inside the cabinet.

It happens at some point to even the most seasoned laboratory user that a spill occurs within the BSC. Taking precautionary measures before and during your work with hazardous materials could help keep you and others safe. **Remember, if a spill occurs, don't panic. Here are some simple steps to keep you and your laboratory safe.** Please check with your EHS office or Biosafety Officer to ensure you have proper steps in place in case of a spill based on standard Biosafety in Microbiological and Biomedical Laboratories (BMBL).



## 1. Spill Kit

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The lab should have a kit or the components readily available to address an accidental spill. This includes an easy-to-read outline of the spill response Standard Operating Procedures (SOPs) that should be posted, read and understood by everyone in the lab, the appropriate personal protection equipment (PPE); including eye protection, a clean lab coat or scrubs and spare slip-on shoes in case clothing contamination occurs. In addition, absorbent materials, disinfectant (e.g., 10% bleach), tongs or forceps to pick up broken containers and a biohazard waste container are needed.

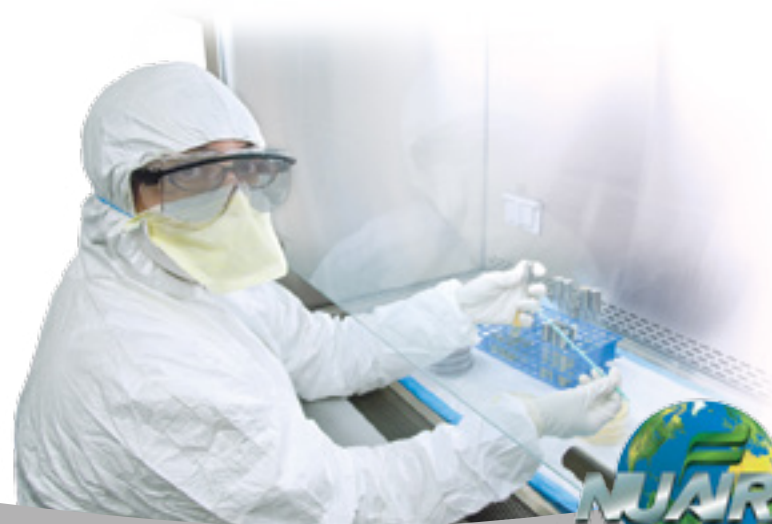
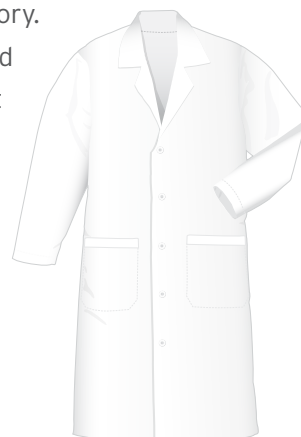
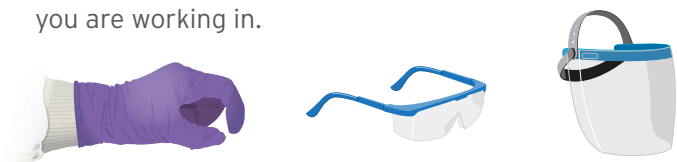


## 2. Wear appropriate personal protection equipment (PPE)

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Before beginning your work in the BSC, be sure to dress appropriately wearing the approved PPE designated for your laboratory.

At a minimum, laboratory coats should be worn buttoned over street clothing, protective eyewear should be on at all times and latex or nitrile gloves are necessary when handling culture, contaminated surfaces, or equipment. Again, be sure to follow the recommended BMBL procedures for the biosafety level of the laboratory you are working in.

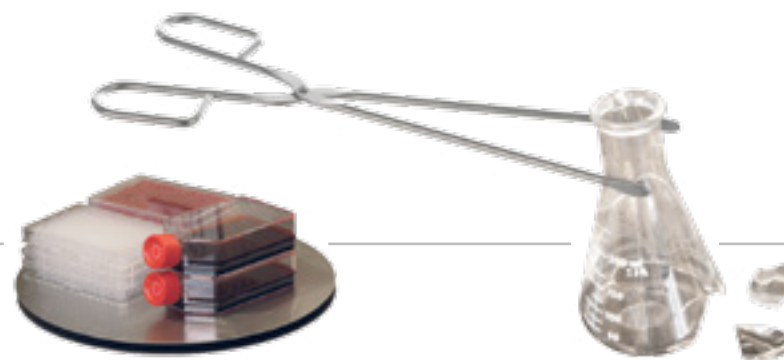


### 3. Perform decontamination steps while the cabinet is operating

When a spill of bio-hazardous material occurs within a BSC, cleanup should begin immediately, **while the cabinet continues to operate**. Keeping the cabinet running will prevent the escape of airborne contaminants and ensure that whatever is in the cabinet stays in the cabinet protecting those around you and the laboratory.

### 4. Remove items from the spill area

Before attacking the spill, first remove the tubes, pipettes or any other item that might have contained the spilled liquid and place them into the biohazard bag in the cabinet. It is important to contain contaminated materials inside the operating cabinet to avoid exposure to the laboratory. Always use tongs or forceps to pick up any glass or sharps to prevent accidental injury.



*Remove equipment to sterilize*

*Remove broken glass or sharps with tongs or forceps to sharps container for disposal.*



## 5. Cover the spill with absorbent material

Cover the spill inside the BSC with absorbent material such as paper towels and let the spill soak in. This helps to prevent aerosolization of the contaminant. Once the towel is covering the spill, apply appropriate disinfectant for the type of spill onto the towel, working from the outer edge to the middle of the towel. **Applying the disinfectant from the outside to the inside of the spill** helps to trap the material within the paper towel and decontaminate. It is important to note that the agent spilled must not be resistant to the disinfectant selected for cleanup. Having a laboratory procedure that addresses the biohazards you might encounter will ensure that you have the appropriate materials available for a spill. Bleach solutions have several advantages over the others such as low cost, fast acting and broad spectrum of effectiveness, but they are corrosive for use on stainless steel surfaces inside a BSC and should be rinsed (refer to step 7).

*Note: Use of chlorinated or halogen materials in the cabinet will damage the stainless steel.*



## 6. Allow 20 minutes for disinfectant contact time

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Depending on what material was spilled and what disinfectant you are using, you might need to vary the disinfectant reaction time. As a rule of thumb, 20 minutes should be adequate time to neutralize the contaminant.

## 7. Wipe up spill and excess liquids with towels

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Once the spill has been contained and the disinfectant has had adequate time to react, use the towels to wipe up excess liquid. Place used towels into a biohazard bag located in the cabinet.



## 8. Treat the area with the decontaminant again

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Apply disinfectant to the spill area again and give it appropriate time to work before wiping up with fresh towels. This helps ensure that all of the contaminated material and surface are decontaminated. Also check the spill pan under the work surface and disinfect following the same procedure if needed.



## 9. Rinse the spill area well

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If bleach (or any other corrosive disinfecting agent) was used to clean the spill, use sterile water to rinse and then again to wipe the residual bleach (or disinfectant) off of the working surface. Bleach is very corrosive to stainless steel and will cause damage over time if it is used to clean the cabinet.

## 10. Once the cabinet has been cleaned, remove gloves and other protective equipment

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Thoroughly wash your hands with soap and water. Run the BSC for at least 10 minutes before resuming work. Report the spill incident to your supervisor.

Following these steps will help you keep yourself and those around you safe if a spill in the BSC occurs. It will also help to maintain your equipment for years of use. So keep the workspace clean and let the research flow!



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For more information please visit  
[www.nuaire.com](http://www.nuaire.com) or call **1.800.328.3352**



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