

Biosafety Cabinet Set-Up Procedures

The [CDC/NIH Biosafety in Microbiological and Biomedical Laboratories \(BMBL\), 6th ed.](#), contains recommendations regarding protection of vacuum systems when working with biosafety level 2 materials. The combination of disinfectant-filled flasks and an in-line filter protects personnel who service the equipment and the vacuum system from contamination.

Assembly of a Vacuum Flask System

Equipment Needed:

- Two vacuum flasks, preferably plastic to avoid breakage
- Thick-walled plastic tubing
- Glass or plastic tubes
- Rubber Stoppers
- Filters



Figure . One method to protect a house vacuum system during aspiration of infectious fluids. The left suction flask (A) is used to collect the contaminated fluids into a suitable decontamination solution; the right flask (B) serves as a fluid overflow collection vessel. An in-line HEPA filter (C) is used to protect the vacuum system (D) from aerosolized microorganisms.

Biosafety Cabinet Set-up

Aspirator bottles or suction flasks should be connected to overflow collection flasks containing an appropriate disinfectant (A and B) and to an in-line HEPA (C) or equivalent filter before the vacuum line (D). Note that the glass or plastic tube should be placed into the solution in flask B to minimize aerosols. If

the flasks are located outside of a biosafety cabinet, use secondary containment (bin or tray) to contain spills if flasks are knocked over or in the event of breakage. For more detailed instructions please follow [GW's Cell Culture Waste Guidelines](#).

Disinfectant

Fill the Aspiration Vacuum Flask to about 10% of the flask's volume with 10% bleach. Keep in mind that when bleach and water are mixed together, the disinfectant qualities of bleach will degrade after 24 hours. You will need to add additional bleach prior to disposal. Do not use alcohol due to flammability and disposal concerns.

Disposal of Flask Fluid

When flask (A) is approximately 75% full, it is time to disinfect and dispose of the fluid. Add fresh bleach to achieve a 10% bleach solution. Stir the fluid and let sit overnight or at least 2 hours. Dispose of the solution down the drain with plenty of cool water.

Filters

Change filter at least annually. Dispose of expired filters into the biohazard waste box.