Principal Investigator: Date Approved:

**Aspiration Flask Setup, Use and Maintenance**

This SOP applies to setting up, using and maintaining an aspiration flask and in-line filter for aspiration of liquids.

Aspiration of liquids generates aerosols inside the aspiration flask and could contaminate the house vacuum line. In the BSL2 laboratory aspiration flasks must be kept inside the biosafety cabinets or placed inside secondary containment large enough to hold all the liquid is the flask, should it leak. In addition, **ALL** vacuum lines must be protected using a HEPA filter to prevent liquid entering the vacuum pumps. Proper use and maintenance of aspiration setups is necessary for safe capture of liquids.

**Personal Protective Equipment**



**BSL1 or BSL2**

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**BSL2+**



**Engineering Controls, Equipment, and Materials**

|  |  |
| --- | --- |
| **Biosafety Cabinet** | Enclosed, ventilated laboratory workspace that protects the worker from aerosols |
| **Vacuum** | House vacuum line or pump |
| **Filter** | In-line HEPA filter with start date written on it |
| **Container(s) with cap** | Vacuum flask or bottle large enough for aspirated fluid and disinfectant with enough head space to avoid fluid uptake by vacuum system. In BSL2 lab, labeled with a Biohazard sticker |
| **Secondary Container** | For aspiration setups in BSL2 labs outside of the BSC, large enough to contain a spill from the primary container and labeled with a Biohazard sticker |
| **Disinfectant** | Appropriate to the agent(s) (see Decontamination and Disinfection SOP) |
| **Tubing** | Of appropriate thickness to withstand the vacuum and appropriate inner diameter to fit snugly on the connections |
| **Aspirating Pipettes** | Disposable Pasteur pipette or Disposable plastic Pasteur (required in BSL2+) |

**Procedures**

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| --- | --- | --- | --- |
| **Assembly** | **1.** In the BSC, attach tubing to the vacuum port (D) and to the HEPA filter (C): see diagram below) | | |
| **2.** Attach a second tube to the other side of the filter and to the vacuum container | | | |
| **3.** Add sufficient disinfectant to the container (A) for the desired final concentration (for bleach, 10% of total volume). | | | |
| **4.** Cap the container | | | |
| **5.** Use a third tube to connect the inlet to an aspirating pipette | | | |
| **Use** | **6.** Aspirate fluids into vacuum container using the aspirating pipette | | |
| **7.** Change aspiration tips between samples and dispose as biohazardous waste | | | |
| **8.** At the end of the procedure or when the container is ¾ full, aspirate additional concentrated disinfectant to clean the vacuum tubing | | | |
| **9.** Dispose of the aspirated liquid per the Liquid Medical Waste SOP | | | |
| **Maintenance** | | **10.** Check the integrity of the vacuum connections and tubing with each use |
| **11.** Change the HEPA filter at least every 2 months or when noticeably contaminated | | |
| **12.** Change the disinfectant as required by the manufacturer: for bleach at least every 2 days | | |

**Cautions and Considerations**

* A second container (trap) (B) with disinfectant between the collection container and filter can help ensure fluids do not enter the filter or vacuum line
* Ensure that unidirectional filters are installed with the inlet toward the flask and the outlet toward the vacuum

**Aspiration Flask Setup Example**

