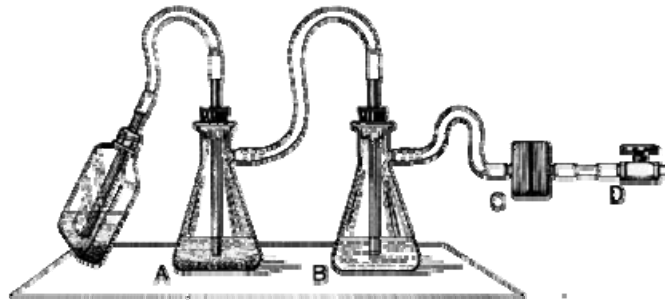




PROTECTION OF PLUMBED VACUUM SYSTEM

When using the plumbed vacuum system for liquid aspiration or filtration, a double trap setup (primary and secondary containment trap) and hydrophobic in-line filter must be placed in the vacuum line.* The filter stops debris, liquid, infectious agents, and biologically-derived toxins from entering and contaminating the system. These materials endanger the employees that routinely service the vacuum lines.

The CDC/NIH recommended method to protect a vacuum system is demonstrated below. The left suction flask (A) is used to collect the contaminated fluids into a suitable decontamination solution (bleach); the right flask serves as a fluid overflow collection vessel. A glass splarger in flask B minimizes splatter. An in-line HEPA or PTFE hydrophobic filter (C) placed immediately before the valve is used to protect the vacuum system (D) from aerosolized microorganisms.



*SOURCE: CDC/NIH: Primary Containment of Biohazards: Selection, Installation and Use of Biological Safety Cabinets 2nd ed.

The HEPA or PTFE filter must be replaced at least annually or whenever there is blockage/increased resistance. Several vacuum line protection filters are readily available from major scientific suppliers. Two filters available from Fisher Scientific are listed below:

Whatman HEPA-Vent Filter

- Glass fiber filter is treated to be mildly hydrophobic
- Repels moisture, prevents bacterial growth
- 0.3µm particle retention unaffected by autoclaving
- Bidirectional flow
- Filter area: 16cm²



Cat. #	Whatman #	Price/10 Pack
09-744-79	6723-5000	\$52.89

Millipore Millex Vacuum Line Protection and Tank/Bioreactor Venting Filter Units

- Hydrophobic PTFE membrane in a polypropylene housing
- Sterilize ambient air entering fermenters
- Filter incubator gas to protect against contamination
- Filter nitrogen and air used to dry liquid samples
- Nonsterile and autoclavable
- Variety of inlet/outlet combos, including stepped hose barb and 1/8 NPT
- Bidirectional



Cat. #	Millipore #	Price/ 10 Pack
SLFG 750 10	SLFG75010	\$93.00