

Johns Hopkins Safety Manual	<i>Policy Number</i>	HSE 506
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POLICY

It is the policy of Johns Hopkins to contain liquid and aerosol hazards in the laboratory research environment. When vacuum is used to manipulate biohazardous materials, a suitable trap must be employed to insure that the building vacuum pump and compressed air lines do not become contaminated. All laboratory vacuum sources shall be protected by the use of fluid/aerosol excluding filters on the suction side.

GUIDELINES

During vacuum filtration or aspiration procedures, laboratory vacuum systems must be protected. HSE recommends use of portable vacuum pumps instead of the building vacuum system. A simple bench-top aerosol/fluid trap can protect building/laboratory vacuum systems. The basic vacuum trap consists of a disposable cartridge-type filter (**JHU Cat.# 504481**) or equivalent installed in-line with a collection/overflow vacuum flask system. See example below.

The aerosol/fluid trap consists of two vacuum flasks, preferably plastic, (size dependent on amount of fluid that may accidentally be aspirated out of the collection flask), thick walled plastic tubing (to prevent tubing collapse), rubber stoppers, a filter (prevents unwanted potentially biohazardous fluid and aerosols from entering vacuum systems), and a ceramic sparger (ceramic fish tank bubbler) immersed in disinfectant. The sparger disperses aerosols passing out of the collection flask into small bubbles so that adequate contact is made with a disinfectant solution. Use an appropriate disinfectant solution shown to be effective on the biohazardous material under study. Consider using anti-foam agent when appropriate. The anti-foam agent should be added to the overflow flask since air bubbling through the disinfectant-immersed sparger may produce foam that could shut off the vacuum if allowed to clog the filter.

When the filter or overflow flask require routine changing, they can be safely removed by clamping the line between the filter and the vacuum source before disconnecting the tubing from the source. The filter and vacuum flask should be decontaminated by autoclaving if they have been in contact with potentially biohazardous material.

RESPONSIBILITIES

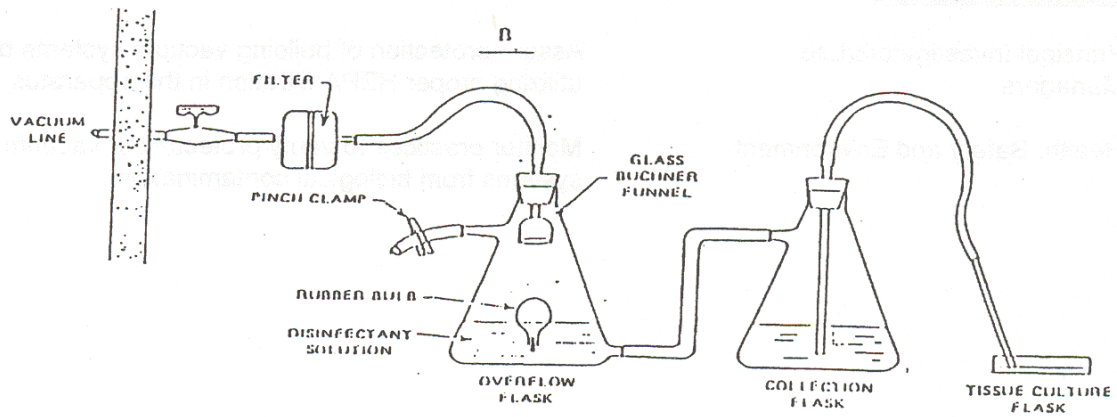
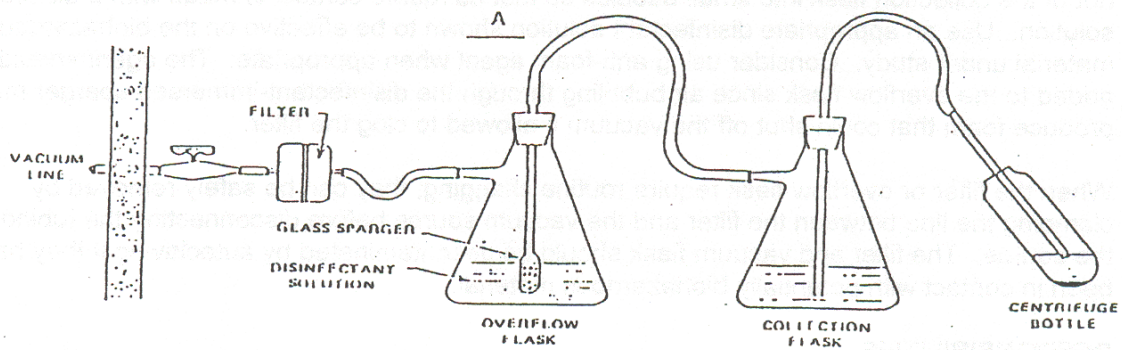
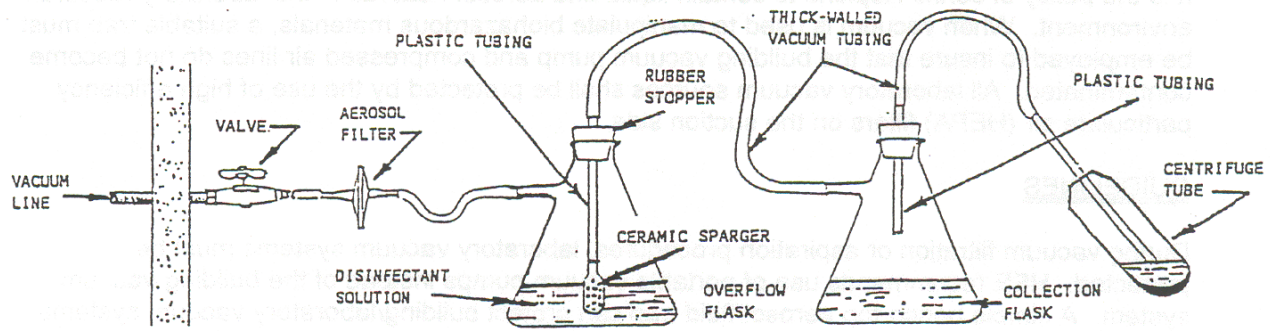
Principal Investigators/Lab Managers Assure protection of building vacuum systems by utilizing proper HEPA filtration in the apparatus.

Health, Safety and Environment Monitor practices to verify protection of vacuum systems from biological contamination.

REVIEW CYCLE

Annually

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TECHNIQUES FOR PROTECTING VACUUM SYSTEM FROM CONTAMINATION