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Revision: 1.0	Subject: Vacuum & Aspiration Equipment	

Purpose:

To prevent accidental exposure of lab personnel or maintenance employees who may be required to repair portable vacuum pumps, central vacuum system, vacuum line connections.

Applicable Legislation, Standards, Guidelines:

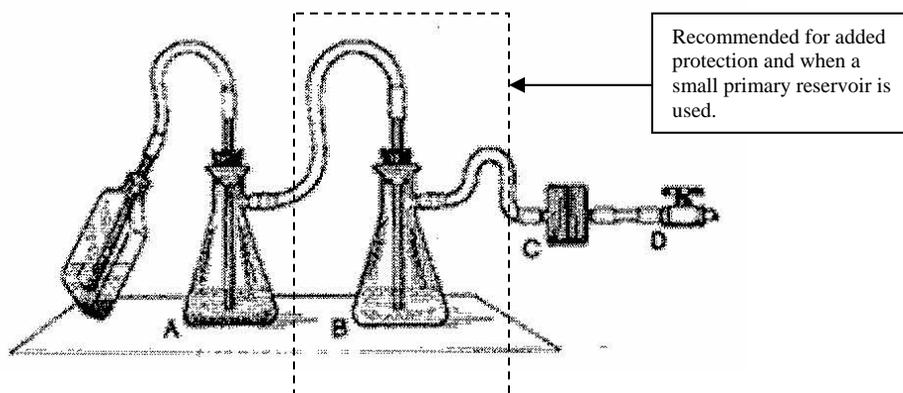
Ontario Occupational Health and Safety Act -R.S.O. 1990
Control of Exposure to Biological or Chemical Agents -Regulation 833

Requirements:

Experimental procedures involving biohazardous material frequently require the use of vacuum pumps or building vacuum systems. Such procedures can result in the accidental contamination of the pump, vacuum system, laboratory air or plumbing system with hazardous aerosols or fluids.

At a minimum, the vacuum pump or vacuum system must be protected with at least one primary reservoir and HEPA filter assembly when the possibility for contamination exists. For an extra margin of safety or when the primary reservoir is a small flask that is prone to overflowing, it is recommended that a two reservoir system (Figure 1.0) be used.

Figure 1.0 Optimal Protection for Vacuum Systems



The above arrangement provides optimal protection for vacuum systems during aspiration. The left suction flask (A) is used to collect fluids into a suitable decontamination solution; the right flask, which is recommended especially when flask (A) is small and prone to overflowing, serves as a fluid overflow collection vessel. A glass splarger in flask B minimizes splatter. An in-line HEPA filter (C) is used to protect the vacuum system (D) from aerosolized materials



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Where possible, the secondary containment flask should be placed higher than the experiment so that liquid accidentally aspirated into the flask can drain back to the primary reservoir when the connection to the vacuum line is broken.

Inactivation of aspirated materials can be accomplished by placing sufficient chemical decontamination solution into the flask to kill microorganisms as they are collected. Once inactivation occurs, liquid materials can be disposed of as non-infectious waste.

The filter should have a rated capacity to remove particles 0.2 um or larger. Filters can be either disposable or the type that can be autoclaved for reuse. All filters that are potentially contaminated with biohazardous material should be autoclaved before disposal. Information regarding filters can be obtained by contacting the Department of Environmental Health and Safety.

Revision History:

1.0 - January 2006: Initial Release