Checking the Magnehelic for Level 1 BSC Use

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# Purpose

<<<< This SOP is left in DOCX format so that you may edit it for your own laboratory>>>

The purpose of this SOP is to lay out the responsibilities, equipment and procedures required for using a biological safety cabinet for level 1 work.

# Scope

This SOP applies to all laboratories using biological safety cabinets for level 1 work.

# Responsibilities

## Supervisors

Supervisors are responsible for:

* **Reviewing this SOP on a regular basis. Review is to consider and mitigate the risks of spill, loss of containment and exposure or other harm. Refer to Performing Risk Assessments SOP.**
* Ensuring that all workers under their supervision are trained on and are proficient in performing the steps of this SOP.
* Ensuring all required personal protective equipment is available and in good repair.
* Providing for the regular certification of BSC’s and other primary containment devices.

## Workers

Workers are responsible for:

* Completing all training required for safe operation prior to first use.
* Review appropriate documentation (PSDS, SDS and manufacturer’s guidelines) prior to working with biohazardous materials, chemicals and equipment.
* Following this SOP as approved by their supervisor.
* Take proper care of equipment per specified use and guidelines as set out by the manufacturer.
* Reporting any broken equipment immediately to their supervisor.
* Reporting any paper or other items sucked up into the BSC fans immediately to their supervisor.

# Materials

* Log sheet for recording Magnehelic readings
* User manual for your BSC

# Certification Requirements for Biological Safety Cabinets

* the Canadian Biosafety Standard requires that biological safety cabinets for level 2 use are certified annually, they do not specify requirements for level 1
* NSF49 requires a BSC to be certified upon installation, upon movement or relocation and upon repair, regardless of level.
* Common practice has been to leave the decision to the supervisor regarding whether or not to certify a BSC that is used for level 1 work.
* Certification tells you if contaminants are getting into the system and if system air is escaping the BSC unfiltered. Although not a risk for human health, there is a risk for product contamination.

# Last Certification Sticker

* The certification sticker shows the date of certification and the reading on the Magnehelic gauge that is associated with optimal air flows which afford proper functioning of the BSC i.e. protect the person, the product and the environment,
* The certification sticker will not show information related to any other results associated with NSF49 test, including filter leaks and ducting leaks.
* The certification paperwork will describe all the tests performed and all the results obtained and whether or not the BSC passed certification.

# Reading the Magnehelic Gauge

* The number on the Magnehelic gauge will represent different parameters depending on the manufacturer or model of the BSC. Your user manual should describe this.
* The number should be very close to the reading recorded on the last sticker.
* Numbers that increase indicate loading of the HEPA filter with particulates
	+ Numbers more than 10% higher could indicate that the fan is working harder and it may not be achieving strong enough air flows to maintain the air curtain
	+ Discontinue use of a BSC that has more than 10% increase in the Magenehelic reading compared to the last sticker
* Number that decrease indicate a a hole in the HEPA filter or seal or plenums and therefore contamination of your product is highly likely
	+ Discontinue use of a BSC where the Magnehelic reading is less than the number on the last sticker
* Record the date and the reading on the log sheet.
* Compare the number to the last reading and to the last sticker.

# Items That Influence Filter Loading

* Dusty floors and surfaces
* Cardboard boxes, especially during cutting or ripping
* Paper towels in general, use kimwipes whenever possible.
* Propped open doors
* Dirty labcoats
* Tracked in dirt and dust
* Supply air vents