

Lakehead University Health & Safety Procedure	Fume hoods and Biological Containment Cabinets
Approved By:	Approved on: Revised on:
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Intent: This document was created to ensure that Lakehead University staff, faculty and students follow procedures which ensure safety and compliance when working with chemicals and biological agents.

Scope:

This document applies to all members of the University Community who are working with a chemical or biological hazard.

Definitions:

- CSA* the Canadian Standards Association is a not-for-profit membership-based association that develop standards to address needs, such as enhancing public safety and health, advancing the quality of life, helping to preserve the environment and facilitating trade
- Special ventilation devices* any device which supplies or exhausts air from the workplace
- Chemical fume hood* designed to prevent hazardous materials from entering the breathing zone and exposing the user
- Biological Safety cabinet* designed to protect people and the environment from contamination by microorganisms using high efficiency particulate air (HEPA) filters to clean the supply and exhaust air

Applicable Legislation and Standards:

Occupational Health and Safety Act, R.S.O. 1990 Sections 25, 27, 28

Regulation 851, R.R.O, 1990, Industrial Establishments, Sections 126, 127, 128;
Regulation 833, R.R.O, 1990, Control of exposure to biological or chemical agents, Section 3.

CSA Standard Z316.5 - 04, Fume hoods and Associated Exhaust Systems;
CSA Standard Z316.3 – 95, Biological Containment Cabinets (Class I and II) Installation and Field Testing.

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Procedures:

- Chemical fume hoods and biological safety cabinets will not be acquired, installed, re-located or decommissioned without prior notification being given to Physical Plant and to Office of Human Resources – Health and Safety, in conjunction with the Laboratory Decommissioning Policy. **All new hoods must meet CSA standard Z316.5 – 04 or they will not be installed.**
- Ductless fume hoods do not meet the CSA standard Z316.5 – 04, or Ontario Fire Code (in some circumstances) and will not be installed.
- Physical Plant will apply to the Ministry of the Environment for a *Certificate of Approval – Air* for all new fume hoods, vented Biosafety cabinets and ventilation devices that discharge to the air.
- All new fume hoods installed on campus will be equipped with an air flow alarm.
- Physical Plant will coordinate a program to establish annual testing and calibration of chemical fume hoods.
- The Principle Investigator/Lab Manager shall coordinate a program for annual testing of biological safety cabinets by an accredited firm. Copies of the certificate will be attached to the Biosafety cabinet and filed with the Office of Human Resources – Health and Safety.

Guidelines:

- In order to comply with Provincial regulations, all persons exposed to a chemical or biological hazard shall wear the appropriate personal protective equipment. Should the particular hazard warrant, work with the agent will be conducted in an appropriate special ventilation device. This applies to all members of the University community, including staff, faculty, students and volunteers.

Fume Hood

- In order to function correctly, fume hoods must be kept free of unnecessary equipment and clutter.
- The sash should be located at the lowest practical level.
- A chemical fume hood should never be modified, nor the airfoil removed.
- All electrical equipment that is plugged into an outlet outside of the hood should have its cord run underneath the airfoil, not over top, if possible.
- Always position the sash between the operator and the work.
- Don't open the sash rapidly on a working fume hood and move slowly when working in the hood.
- Never put your head into the hood while there is work in it.
- Keep all work within the “dished” area of the work surface and 15 cm (6”) from the front of the hood.
- Limit unnecessary pedestrian traffic near a working fume hood.

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- If a hood ceases to work correctly, contact Physical Plant Work Order Desk immediately at extension **8273**. Do not continue to use a malfunctioning fume hood.
- Prescribed personal protective equipment must be worn while working in a Chemical fume hood.

Biological Safety Cabinet

- The guidelines listed below outline operator safety, for additional instructions and safety measures speak with the area Supervisor.
- Ensure that the biological safety cabinet has been certified within the last year. If it is overdue, inform your supervisor.
- Ensure that the UV light is off whenever someone is in the room, if it is on, ensure that all sliding windows are shut and any fixed window openings are shielded.
- When the biological safety cabinet is started, or anytime the air is disturbed within the cabinet, allow the unit to run for two to three minutes to reestablish air flow patterns.
- Do not block any of the grills of the cabinet, this disrupts the air flow and may lead to work contamination and breach of containment.
- Limit unnecessary movement in and around the cabinet while it is being used.
- If possible, only one person should work in the cabinet at one time.
- The operator should be seated, with armpits level with the bottom of the window.
- When entering or exiting the cabinet, do so straight on and allow the air flow to stabilize before continuing work.
- Avoid using an open flame in a cabinet.
- A Biological Safety Cabinet is not a chemical fume hood. Chemical reagents must never be mixed or prepared in a Biological Safety Cabinet. Use of hazardous materials in Biological Safety Cabinets (ie. Antibiotics, DNA dyes, ethanol) must be kept to small volumes and low concentrations.
- When work is finished, disinfect the interior surfaces of the cabinet and leave running for at least two to three minutes.
- Prescribed personal protective equipment must be worn while working in a Biological Safety Cabinet.

Evaluation:

This policy will be reviewed by the Health and Safety Officer – Human Resources and the Joint Occupational Health and Safety Committee annually.