



Date Issued: July 2026	Page No.: 1	Document No.: SOP-LAB-01
Revision: 1.2	Subject: Fume Hoods – Procedures for Installation, Maintenance and Use	

1.0 Introduction

The Standard Operating Procedure for Fume Hoods was developed by the Department of Environmental Health and Safety (EH&S), in accordance with the University Policy Statement on Health and Safety and to ensure compliance with the applicable legislation governing the installation, maintenance and use of Fume Hoods.

Applicable Legislation:

- Occupational Health and Safety Act, R.S.O. 1990
- CSA-Z316.5:25 Fume Hoods and Associated Exhaust Systems

2.0 Scope and Definitions

A chemical fume hood consists of an enclosed working chamber attached to an exhaust ventilation system. The workspace of the fume hood is ventilated by an induced flow of air through the face opening. The air flow is intended to capture and contain gases, vapours or aerosols generated within the enclosure. These airborne contaminants are then exhausted from the cabinet. Laboratory fume hoods are used as a primary means of protection to the employee from inhalation of and exposure to odorous and/or hazardous chemicals.

Biological safety cabinets (BSC's) and Laminar Flow cabinets are not chemical fume hoods and therefore not in the scope of this document.

2.1 Definitions

Airfoil: a deflector shaped to promote uniform airflow into a fume hood.

Biological safety cabinet: a cabinet that uses HEPA-filtered airflow to contain potentially infectious aerosols generated by microbiological procedures. A biological safety cabinet is not a fume hood.

Chemically resistant: the ability of a material to resist damage by chemical reactivity or solvent action.

Cross drafts: all air currents external to the fume hood that can impact the performance of the hood.

Damper: an adjustable device for controlling airflow.

Perchloric acid fume hood: a fume hood where construction design and materials have been selected to prevent a perchloric acid reaction.



Date Issued: July 2026	Page No.: 2	Document No.: SOP-LAB-01
Revision: 1.2	Subject: Fume Hoods – Procedures for Installation, Maintenance and Use	

Radioisotope fume hood: a fume hood constructed to contain spills, be easy to decontaminate and strong enough to bear the weight of any necessary radiation shielding material.

Recirculating fume hood: a fume hood that is not ducted outside, but instead air is passed through chemical-specific filters, and the 'clean air' is returned to the laboratory. **(The Department of Environmental Health and Safety will not approve applications for use of recirculating fume hoods.)**

Face opening: the part of the fume hood through which work is performed.

Face velocity: the velocity of air moving through the face opening, usually expressed as feet per minute. In a laboratory setting the recommended face velocity is 100fpm +/- 20 fpm.

Sash: term used to describe the movable glass panel that covers the face area of a fume hood.

Baffles: Movable panels located on the sides and/or back wall of the fume hood that create slots in which air is exhausted. The pattern of air moving into and through the hood is determined by the setting of the baffles.

Bypass: Compensating opening in a fume hood that functions to limit the maximum face velocity as the sash is raised or lowered.

3.0 Responsibilities

This section outlines the responsibilities within the university for implementation of this SOP.

3.1 Facilities

Facilities have the following responsibilities under this SOP:

- Ensure that Facilities staff who perform maintenance on fume hoods are trained on the proper process and PPE requirements prior to servicing.
- Comply with CSA Standard Z316.5-25 when installing chemical fume hoods.
- Perform preventative maintenance on fume hoods, fans, and ductwork on a scheduled basis.
- Inspect and perform maintenance on sashes, lights, service fixtures and interior.
- Perform repairs or maintenance identified by scheduled inspections, EH&S, or by fume hood users.
- Notify the Department of Environmental Health and Safety when maintenance or modifications to fume hoods have occurred.



Date Issued: July 2026	Page No.: 3	Document No.: SOP-LAB-01
Revision: 1.2	Subject: Fume Hoods – Procedures for Installation, Maintenance and Use	

3.2 The Department of Environmental Health and Safety

Responsibilities of the Department of Environmental Health and Safety include the following:

- Ensure that the fume hoods are evaluated at least annually.
- Perform field tests for verification of face velocity and test the operation of the air flow alarm.
- Perform field tests for verification of proper airflow and patterns.
- Report any variations from “acceptable performance” to the Departmental Safety Officer and Facilities.
- Maintain documentation of testing result records.
- Review this Standard Operating Procedure (SOP) periodically and amend as necessary.

3.3 Directors, Department Heads and Managers

Each has the following responsibilities under this SOP:

- Ensure that pertinent Supervisors, employees, and students are notified of their responsibilities when working with fume hoods.
- Ensure that all employees and students have received training and instruction on the proper operation of fume hoods.
- Ensure that procedures, equipment and materials appropriate for the fume hoods under his/her authority is provided to protect the health and safety of all employees and students.
- Ensure that all employees and students are given adequate supervision and instruction on the hazards of chemical usage and fume hood operation.
- Ensure that the components of this SOP and the applicable legislation are implemented in all facilities under his/her authority.

3.4 Departmental Safety Officer

Departmental Safety Officers shall:

- Ensure that supervisors/principal investigators and all fume hood users are aware of their responsibilities under this document.
- Receive report from EH&S regarding fume hood testing results specific to department and relay the information to the relevant departmental contacts.
- Establish department and/or lab specific policies as necessary.



Date Issued: July 2026	Page No.: 4	Document No.: SOP-LAB-01
Revision: 1.2	Subject: Fume Hoods – Procedures for Installation, Maintenance and Use	

3.5 Laboratory Supervisors/Principal Investigators

Supervisors must be knowledgeable about hazards and standard operating procedures associated with working with the fume hoods under his/her authority, the training requirements, as well as the other requirements of this program. He/she has the following responsibilities:

- Ensure that Fume Hood Users receive safety training regarding laboratory work practices and fume hood use guidelines prior to commencing work with fume hoods.
- Ensure that all fume hood users follow best laboratory practices when operating fume hoods.
- Report malfunctioning fume hoods and alarms to facilities for repair. When uncertain if a fume hood or alarm is functioning properly, contact EH&S.
- Ensure that no work or experiments are carried out in a malfunctioning fume hood.
- Coordinate modifications, maintenance, repair and new equipment needs with Facilities and/or the Department of Environmental Health and Safety.

3.6 Fume Hood Users

The responsibilities of fume hood users include the following:

- Rigorously follow best laboratory work practices.
- Use hoods only according to recommended guidelines for safe use.
- Notify Laboratory Supervisor/Principal Investigator immediately in the event of malfunction.

4.0 User Guidelines

4.1 General Use Chemical Fume Hoods

It is highly recommended that all operations that involve the following WHMIS hazard classes be performed in a functioning fume hood:

- Class B; Flammable and Combustible Materials
- Class C; Oxidizing Materials
- Class D1 (a & b); Materials with Immediate and Serious Toxic Effects
- Class D2 (a); Materials with Other Toxic Effects
- Class E; Corrosive Materials
- Class F; Dangerously Reactive Materials



Date Issued: July 2026	Page No.: 5	Document No.: SOP-LAB-01
Revision: 1.2	Subject: Fume Hoods – Procedures for Installation, Maintenance and Use	

Do not use any chemical without first reviewing its SDS and being aware of its physical characteristics and toxicity. All work that generates air contaminants at or above the applicable Threshold Limit Value (TLV) must be done inside a fume hood.

When using a fume hood, you must remember that the hood does not provide absolute containment or absolute protection from the materials in the hood. However, an appropriately designed hood in an appropriately designed laboratory will provide adequate protection if the following safe operating practices are observed.

Do not conduct work in a malfunctioning fume hood. Ensure that the fume hood is on before commencing any work. (Note – Fume hoods should be kept running at all times).

Safe operating practices:

1. Substitute toxic chemicals with less hazardous materials whenever possible.
2. Familiarize yourself with the SDS for the chemical(s) you're about to use.
3. Operate the hood at the proper sash height as indicated by the inspection sticker located on the front of the hood, this is typically between 10 – 18 inches above the sill. The only time the sash may be above that height is during set up or tear down of experiments.
4. Reduce air disturbances by minimizing foot traffic in front of hoods and the opening and closing of doors. Also, ensure that windows are never opened in a lab.
5. Do not position fans so that the airflow is directed across the face of the hood. This can interfere with the airflow and containment of hazardous chemicals.
6. Do not block the airfoil. The airfoil provides airflow across the work surface in the fume hood. If you use absorbent paper in the hood, secure it in place and keep it clear of the airfoil.
7. Do not block the sash windows from closing by feeding wires or hoses through. Cords should go into the fume hood from under the airfoil to allow the sash to be fully closed.
8. No adjustments should be made to the interior or exterior of the fume hood such as adjusting the baffles, removing side panels, or installing shelves or hooks. Doing so could interfere with the airflow and containment.
9. Place bulky equipment towards the rear of the hood and raise it 2 inches off the work surface with blocks or bricks. Do not place it right up against the back wall of the hood as it will block airflow to the rear.
10. Use extreme caution with ignition sources inside of a fume hood. Electrical plugs or other ignition sources shall not be placed inside the hood when flammable liquids or gases are present.
11. Work as far inside the hood as possible, chemicals should be at least 6 inches from the front edge with the sash face between you and the task at hand.
12. Keep your working area and sash face clean and clear to encourage the use of the sash as an added layer of protection against splashes, sprays, etc. If the sash must be blocked with paper or foil for certain experiments, take it down after the experiment has been completed.



Date Issued: July 2026	Page No.: 6	Document No.: SOP-LAB-01
Revision: 1.2	Subject: Fume Hoods – Procedures for Installation, Maintenance and Use	

13. Never put your head inside a fume hood while operations are in progress and potential contaminants are being generated.
14. Do not use the hood as a storage cabinet for chemicals, use approved safety cabinets. Materials and equipment in fume hoods should be kept to a minimum and placed in a manner that will not interfere with airflow.
15. Place any heat-generating equipment in the rear of the hood. Heating devices in the hood produce convection currents that can disrupt airflow.
16. Do not use a hood for any function it was not designed for, e.g. for the evaporation of chemicals, except for very small quantities of volatile materials. Refer to the [Hazardous Waste Disposal Procedure](#) for instructions on waste disposal.
17. Wear protective equipment as per SDS. Fume hoods do not prevent accidents or chemical splashes.
18. Clean up/decontaminate the fume hood after any spills and after each use. Spills must be reported using our [Spill Report](#) form.
19. It is recommended that chemicals and amounts used should be recorded in a logbook, dedicated to one fume hood, so that appropriate monitoring protocols may be used.

4.2 Radioisotope Fume Hoods

Fume hoods used for radioisotope work will be appropriately labeled and located in radioisotope laboratories only.

Refer to [Radiation Safety Policy and Procedures](#) for general rules for working with radioisotopes.

4.3 Perchloric Acid Fume Hoods

Perchloric acid is highly corrosive and oxidative and can react with organic materials to form explosive perchlorate salts and esters. The use of a perchloric acid fume hood will be required when conducting frequent procedures, using large quantities, heating perchloric acid or using anhydrous perchloric acid.

(Note: Acid digestions using acids other than perchloric should be performed in fume hoods designed to withstand the corrosive and damaging effects of repeated manipulations using acid. Consult with Facilities or the Department of Environmental Health and Safety for further information.)

4.4 Recirculating (Ductless) Fume Hoods

It is the policy of the Department of Environmental Health and Safety not to allow recirculating fume hoods to be used on campus for several reasons:

- They have limited functionality due to the wide variety of chemicals used at Queen's University;



Date Issued: July 2026	Page No.: 7	Document No.: SOP-LAB-01
Revision: 1.2	Subject: Fume Hoods – Procedures for Installation, Maintenance and Use	

- The use of inappropriate chemicals or compounds or other misuses of the recirculating fume hood could
- result in contaminated air being recirculated into the laboratory; and
- It is difficult to determine whether the filters are functioning adequately or when they need to be changed.

Therefore, the potential for recirculating toxic materials into the laboratory is significant.

5.0 Maintenance and Testing

Emergency and scheduled maintenance of fume hoods is the responsibility of Facilities and all inquiries regarding these matters should be directed to that department. Airflow testing and the coordination of annual inspections is the responsibility of the Department of Environmental Health and Safety.

A written safety plan for maintenance activities shall be developed and reviewed periodically by Facilities which includes but is not limited to the following:

- Specifications on the required personal protection equipment, including respiratory and protective clothing to be used by personnel while working on fume hood system components;
- The removal, or capping, of all hazardous materials within the fume hood before commencing work;
- Provisions for the lockout of the fan motor;
- Fall protection of workers accessing and maintaining fume hood exhaust fans which meet the requirements of the authority having jurisdiction;
- Power to the fume hood shall be shut off when maintenance is being performed. If the power cannot be shut off, safety procedures shall be put in place to protect workers from injury; and
- Maintenance shall be performed only by personnel trained to conduct such activities. Only authorized personnel shall work on motors, drive systems, and other electrical components.

5.1 Scheduled Maintenance

Daily maintenance shall be performed by fume hood users which includes the verification of the following:

- Clean work-surface, baffles, and sash;
- Labeling and operation of services such as water, natural gas, and compressed air;
- Operation of general illumination, indicator lights, and associated switches;
- Sink drains are functional;
- Sash is easy to raise and lower; and
- Air flow alarm is operational.

All ground-fault circuit interrupters shall be tested monthly by the users or lab supervisors.



Date Issued: July 2026	Page No.: 8	Document No.: SOP-LAB-01
Revision: 1.2	Subject: Fume Hoods – Procedures for Installation, Maintenance and Use	

In accordance with CSA Standard Z316.5-25, every six months Facilities shall inspect and test the following:

- The fan;
- Motor;
- Drive belt and shafts; and
- Bearing and machine guarding.

Every twelve months, the maintenance schedule shall include the following (as applicable):

- Inspect the sash mechanism for corrosion and damage (including sash and cables);
- Inspect the fans, motors, drives, and bearings for correct operation and wear;
- Operate the wash down system and observe the performance to ensure thorough washing;
- Test the controls of the services to the fume hood for proper operation (e.g. water, gas, air, vacuum etc.);
- Inspect the integrity of the fume hood liner;
- Inspect the sink drain for corrosion, leakage and blockage;
- Check the stability and condition of the discharge stack (including guy wires);
- Inspect the condition of the exhaust ducting, particularly the integrity of the joints;
- Inspect the interior of the ductwork through inspection ports, or by other methods, particularly at bends where substances can accumulate and cause corrosion, perforation and horizontal runs;
- Measure face velocity and compare to fume hood specifications and correct if needed;
- Verify calibration of the airflow alarm;
- Check the laboratory make-up air balance and temperature and adjust as necessary;
- Check the operation of any balancing damper;
- Repair defects and lubricate as necessary;

5.2 Fume Hood Malfunction

If a fume hood is identified as malfunctioning it must not be used and a sign shall be affixed to the sash indicating that it is out of service.

5.3 Face Velocity and Containment Testing

Fume hoods must be tested for minimum control functions and face velocity as follows:

- After new installation;
- After any repair or modifications are made to the fume hood or exhaust system;
- At least once per year.

Air velocity and containment testing will be carried out on an annual basis. Additional testing will be completed by the Department of Environmental Health and Safety after emergency repairs to the exhaust system or fume hood and upon request of the Department or Facilities.



Date Issued: July 2026	Page No.: 9	Document No.: SOP-LAB-01
Revision: 1.2	Subject: Fume Hoods – Procedures for Installation, Maintenance and Use	

Annual Testing will include the following:

- A physical inspection to check the condition of the liner, sash, baffles, alarm, placement of equipment and free space within the fume hood;
- Average face velocity of the fume hood when the sash is fully opened;
- Average cross drafts in front of the fume hood;
- Determination of the variable air volume response times;
- Small and large smoke test to determine air flow patterns and leakage.

5.4 Certification and Labeling

An external contractor that completes our annual inspections will provide labeling. Each fume hood on campus will be provided with a label that carries the following information:

- Fume hood identification number;
- Face velocity at the sash height sticker;
- Date that the fume hood was inspected and by whom.

6.0 Installation and Removal of Fume Hoods

The installation of any fume hood on campus requires the approval of Facilities and the Department of Environmental Health and Safety.

Facilities will be responsible for assessing the installation with respect to the existing exhaust systems and coordinating the design of the installation to meet all applicable legislation. Facilities will also be responsible for amending existing the Ministry of Environment, Conservation and Parks Certificate Approval or applying for Certificates of Approval for new installations.

The Department of Environmental Health and Safety is responsible for receiving and approving the proposed design of the installation before construction work begins.

6.1 Fume Hood Selection

Only Constant Air Volume and Variable Air Volume fume hoods shall be installed. Auxiliary and Recirculating fume hoods shall not be used.

Prior to a fume hood being selected, a risk assessment of the anticipated use of the fume hood should be undertaken by the department that will be using it. Failure to do so may result in the selection, purchase and use of substandard or inappropriate equipment. This could therefore increase the risk of injury to the fume hood user.



Date Issued: July 2026	Page No.: 10	Document No.: SOP-LAB-01
Revision: 1.2	Subject: Fume Hoods – Procedures for Installation, Maintenance and Use	

6.2 Fume Hood Location

The efficiency of a fume hood is directly related to its location in the laboratory. Traffic can cause air turbulence, which can then cause contaminants to be drawn outside the hood. Therefore, fume hoods must be located in areas with as minimal traffic as possible.

The fume hood should be located away from major air patterns (air inlets and other sources of air turbulence).

Seated workstations should not be located directly opposite fume hood openings.

More specific recommendations for fume hood locations can be found in CSA Standard Z316.5-25 (Figure 2, Page 31 – Page 33, and Figure 3, Page 34).

6.3 Fume Hood Exhaust Systems

Radioisotope and perchloric acid fume hoods must be exhausted separately from each other and from general-use chemical fume hoods.

Duct materials should be compatible with vapors to be exhausted. Stainless steel can be used with most solvents and potentially flammable vapors. The use of perchloric acid and corrosive vapors requires the installation of acid resistant, non-reactive, impervious materials.

The ductwork shall:

- be designed in a manner that will provide optimum air flows in the working chamber of the fume hood;
- avoid horizontal runs to minimize the collection or buildup of corrosive materials; and
- provide circular cross-sections to reduce the number of corners and crevices where corrosion can occur.

Fume hood exhaust ducts shall not contain fire dampers.

The exhaust system shall meet legislative requirements and have a valid Ministry of Environment, Conservation and Parks Certificate of Approval to discharge air.

6.4 Fume hood – Make up (Supply) Air

Supply air should be balanced with hood exhaust in the laboratory such that supply air should be slightly less than exhaust air to allow for the laboratory to always remain at negative pressure.



Date Issued: July 2026	Page No.: 11	Document No.: SOP-LAB-01
Revision: 1.2	Subject: Fume Hoods – Procedures for Installation, Maintenance and Use	

Supply air should be at a suitable temperature to be acceptable by laboratory users.

6.5 Fume Hood Removal Process

For a fume hood to be removed from service and disposed of the following steps need to be taken and documentation maintained. Appendix B shall be posted on the sash of the fume hood and signed off on as each step is completed.

A breakdown of the steps is as follows:

Step 1: Hazard Identification

- Identify all substances used in the hood (chemical, biological, radiological) and complete a hazard assessment.
- Determine the decontamination work required for surfaces (if applicable).
- Hood clearly labeled with Appendix B “Fume Hood Removal Documentation”.

Step 2: Removal of all Contents

- All chemicals removed and properly disposed of or relocated.
- All waste removed and disposed.
- Gas cylinders removed and secured.
- Equipment removed from the hood.

Step 3: Cleaning and Decontamination

- Decontamination method selected (chemical neutralization, disinfection etc.).
- Work surface, sash, and walls wiped down with an appropriate cleaning agent.
- Contamination verification completed (wipe test, etc. if required).

Step 4: Services Disconnected

- Electrical power disconnected and locked out.
- Gas lines shut off and capped.
- Water lines disconnected.
- Vacuum lines are isolated.
- Fire suppression system or washdown system addressed, if applicable.
- Exhaust fans shut down or isolated and ductwork sealed or capped (coordination between Dept and Facilities may be required as a shutdown will affect all fume hoods within the building)

Step 5: Verification by EH&S

- A decommission request shall be submitted to EH&S. EH&S will assess the fume hood and apply a decommission sticker once satisfied that there are no remaining hazardous materials and it's safe for disposal.



Date Issued: July 2026	Page No.: 12	Document No.: SOP-LAB-01
Revision: 1.2	Subject: Fume Hoods – Procedures for Installation, Maintenance and Use	

Step 6: Disposal

- Once a decommission sticker has been applied to the fume hood by EH&S, the department can proceed with coordinating with Facilities to have the fume hood disposed of.

7.0 Training

A training program shall be established by departments and personnel who work with or perform maintenance on fume hoods trained prior to use or servicing. The training programs shall:

- Ensure the safety of users and maintenance personnel is not compromised; and
- Reinforce appropriate use and limitations of the fume hood, for the safety of the user, the facility, and the environment.

The training program should cover the topics listed in Annex F of CSA Z316.5:25 Fume Hoods and Associated Exhaust Systems, Page 78 – 82, this is also listed in Appendix C of this SOP for your convenience.

Records documenting completion of training shall be maintained by each Department and made available to the Department of Environmental Health and Safety upon request.

Revision History:

Version 1.0 – July 2005 – Initial Release

Version 1.1 – December 2015 – Updated to reflect changes in the new CSA Z316.5:15

Version 1.2 – July 2026 – Minor updates to reflect changes in the new CSA Z316.5:25 plus the addition of fume hood removal/decommissioning guidance and training requirements for users and maintenance staff



Date Issued: July 2026	Page No.: 13	Document No.: SOP-LAB-01
Revision: 1.2	Subject: Fume Hoods – Procedures for Installation, Maintenance and Use	

Appendix A**Application For Fume Hood Procurement / Installation**

Contact Person:	Phone Number:
-----------------	---------------

Location Information:

Building:	Room/Location:
Anticipated Installation Date:	Campus Department:

Fume Hood Information:

Type of Fume hood (including make and model):	
Will this hood replace an existing fume hood?	Yes No
Has the area been engineered to support the hood?	Yes No
If yes, by whom (ex. PPS engineer): _____;	
When _____	
Has a list of chemicals to be used in this fume hood been submitted to EH&S	Yes No
Area Manager Approval: _____	
Additional Details: (Attach schematic drawings, designs, sketches etc.)	
(EH&S to complete) Approved For Purchase:	_____
Not Approved For Purchase	Environmental Health and Safety Date
Installed equipment: Passed Certification Failed Certification Tested By: Date:	(EH&S to complete) Approved For Use: Not Approved For Use: Signed: Date:



Date Issued: July 2026	Page No.: 14	Document No.: SOP-LAB-01
Revision: 1.2	Subject: Fume Hoods – Procedures for Installation, Maintenance and Use	

Appendix B
Fume Hood Removal Documentation

DECOMMISSIONING IN PROCESS – DO NOT USE

This checklist shall be printed off and taped to the sash of the fume hood at the start of the decommissioning process to provide a notification to workers that the fume hood cannot be used and to provide documentation of work completion.

<u>Work Item</u>	<u>To be completed by</u>	<u>Date</u>	<u>Sign off</u>
Hazard Assessment	Lab PI/Safety Officer		
Comments:			
Fume Hood Emptied	Lab PI/Safety Officer		
Comments:			
Cleaning and Decontamination	Lab PI/Safety Officer		
Comments:			
Service Disconnect (Plumbing)	Facilities		
Comments:			
Service Disconnect (Electrical)	Facilities		
Comments:			
Service Disconnect (Ventilation)	Facilities		
Comments:			
Service Disconnect (Vacuum)	Facilities		
Comments:			
Service Disconnect (Fire Suppression)	Facilities		
Comments:			
Service Disconnect (Washdown)	Facilities		
Comments:			
EH&S Decommissioning	Health & Safety		
Comments:			



Date Issued: July 2026	Page No.: 15	Document No.: SOP-LAB-01
Revision: 1.2	Subject: Fume Hoods – Procedures for Installation, Maintenance and Use	

Appendix C

Fume Hood Training Topics for Fume Hood Users and Maintenance Staff

Topic	User	Maintenance Staff
Overview of fume hoods - Types of fume hoods present - Functions of fume hoods - Basic principles (e.g., containment and removal of contaminated air to a remote location for dilution or treatment)	Required	Required
Elements of a fume hood - Components - Construction materials - Makeup and auxiliary air systems - Exhaust system - Control devices and related hardware	Required	Required
Uses and limitations of fume hoods - General laboratory work (e.g., hazardous chemicals) - Perchloric acid - Nuclear substances	Required	Required
Fume hood location (CSA Z316.5-25: Figure 2, Page 31 – Page 33, and Figure 3, Page 34)	Required	Required
Records and documents - Users (e.g., list of chemicals used) - Facilities personnel (e.g., repair, certification and calibration history)	Required	Required
Recognizing and reporting a malfunctioning fume hood	Required	Required
Environmental considerations/sustainability - Spill containment (sinks) and purge function - Exhaust air treatment and air monitoring - Greenhouse gas emissions and energy efficiency - Energy consumption and environmental impact of fume hoods and how to minimize them - VAV fume hoods and how they can conserve energy	Required	Required
Commissioning, decommissioning, and field testing - Equipment operating to the requirements of the CSA Z316.5:25 upon installation (commissioning) - Understanding the process of decommissioning a fume hood - Understanding the basics of field testing	Required	Required



Date Issued: July 2026	Page No.: 16	Document No.: SOP-LAB-01
Revision: 1.2	Subject: Fume Hoods – Procedures for Installation, Maintenance and Use	

Selection and use of PPE • Eye and face protection • Respiratory protection • Gloves Protective clothing (e.g., laboratory coats, disposable coveralls)	Required	Required
Fume hood overview • Work surface • Sash • Airfoil (sill) • Baffles • Alarms, sensors, controls, and gauges • Location and functionality of exhaust • Location of documents and records	Required	Required
Recommended safe operating practices • The workspace should be kept clear • All work and sources of emissions should be kept at least 152 mm (6 in) inside the fume hood • Equipment should be kept 229 mm to 305 mm (9 in to 12 in) inside the fume hood • Heat-generating equipment should be placed at the back of the fume hood • Use of the fume hood as a storage unit should be minimized. A one- or two-day supply of chemicals in the fume hood should be considered the maximum • When safe and practical, equipment should be elevated at least 25 mm (1 in) off work surface to permit airflow beneath it • The fume hood alarm should not be put in mute mode when in active use or while hazardous substances are being generated • Shutdown of work when alarms are triggered and source is then investigated • Emergency preparedness plan • Emergency response protocols	Required	Not Required
Required safe operating practices • Work with flammable chemicals is not permitted in a fume hood that contains hot plates, open flames, or equipment that generates electrical sparks • Work is performed with the sash at the lowest appropriate operating level. The sash should be lowered for proper face velocity Note: <i>The sash provides a physical barrier providing user</i>	Required	Not Required



Date Issued: July 2026	Page No.: 17	Document No.: SOP-LAB-01
Revision: 1.2	Subject: Fume Hoods – Procedures for Installation, Maintenance and Use	

<i>protection.</i> • Mechanical stops in the sash are not overridden or disabled. • The sash is completely lowered when the user is not working in the fume hood. • The sash is kept clean and clear. Note: <i>The sash can provide protection from splashes or droplets; however, this does not replace the need for personal protective equipment, including gloves, aprons, and safety eyewear (e.g., goggles, glasses).</i> • The airfoil (sill) is not blocked. • Baffles is adjusted only by qualified airflow experts. • Baffle slots is free of obstructions. • The exhaust fan is turned on, operating, and set at the correct speed before use. • A log of chemicals used in the fume hood is kept, per institutional protocol, in an accessible area.		
Maintenance requirements for fume hood users • Cleaning and housekeeping • Good laboratory practices (e.g., work methods that help reduce contaminant exposure) • Alarms and monitors • Maintenance log • Washdown systems	Required	Not Required
Perchloric acid fume hoods recommended safe operating practices for washdown systems • These systems should be regularly used and undergo proper daily maintenance when perchloric acid is used. This is to facilitate the removal of corrosive and explosive condensates from the interior surface before damage occurs. • The preparation of fume hood for facilities maintenance	Required	Not Required
Maintenance and safety requirements for fume hood facility personnel • Routine maintenance - Fans - Alarms and monitors - Cleaning and housekeeping - Shutdown for remote maintenance - Contents removal for maintenance work - Advising users of maintenance work - Signage to indicate inoperative fume hoods	Not Required	Required



Date Issued: July 2026	Page No.: 18	Document No.: SOP-LAB-01
Revision: 1.2	Subject: Fume Hoods – Procedures for Installation, Maintenance and Use	

- Preventive maintenance (every 12 months) - Fan and stack check - Alarm checks - Monitor calibration - Failure criteria - Maintenance log		
Periodic testing - Procedures for monitoring operation - Measurement of face velocity - Alarms and air velocity measurement (continuous monitoring) - Containment and operational testing - Operational testing of service controls - Setting of face velocities and baffles to match the application	Required	Required