



Fume Hood User Guidelines

1. Introduction

A fume hood cabinet is an enclosed working chamber fitted with an exhaust ventilation system. The primary function of the fume hood cabinet is to protect individuals working with chemicals from any potential vapours, dust, gases or odours emanating from said chemicals. In order for the fume hood to effectively protect individuals from chemical vapours, dust, gases or odours it must be operated properly by the fume hood user. This standard describes the proper usage of a chemical safety fume hood in University of Toronto labs.

2. Application

These guidelines apply to users and operators of fume hoods and lab managers or supervisors or laboratory space that contain chemical safety fume hoods. This standard covers the use, operation and management of all types of chemical safety fume hood systems on campus. This standard does not cover maintenance or fume hood design as these topics are covered in separate standards.

3. Definitions

Fume hood user or operator: Any individual that accesses a University of Toronto chemical safety fume hood for any length of time and relies on said fume hood to protect them from exposure to chemical vapours, dust or odours being produced or contained within.

4. Responsibilities

4.1 Office of Environmental Health and Safety

It is the responsibility of the University of Toronto Office of Environmental Health and Safety to, where feasible:

- Maintain, evaluate and revise this standard;
- Freely allow all University of Toronto workers and students to access this standard;
- Provide guidance in the understanding and functionality of this standard; and
- Adhere to the procedural requirements specified for the UofT OEHS in this standard.

4.2 University of Toronto Workers, Students and Contractors



Any individuals on campus identified as 'Fume Hood Users and Operators' should adhere to all standards identified in Section 5 of this document at all times when using and operating a University of Toronto fume hood.

4.3 Lab Managers and Supervisors

It is the responsibility of Lab Managers and Supervisors to:

- Provide fume hood safety training for individuals, of whom they supervise, that are identifiable as 'Fume Hood Users and Operators'; and
- To the best of their ability, ensure that such individuals, of whom they supervise, adhere to all standards identified in Section 5 of this document at all times when using and operating a University of Toronto

5. Guidelines

This section describes the standards and required procedures that should be followed by Fume Hood Users and Operators when using a University of Toronto fume hood.

5.1 User Safety Checks

Prior to using or operating any fume hood, a fume hood user or operator should conduct the following checks to ensure the fume hood is safe to use and the fume hood and alarm systems are functioning properly:

1. Fume hood flow alarm:
 - a. Powered on and operational; and
 - b. Not alarming.
2. Fume hood certification sticker:
 - a. Is present and the certification is current;
 - b. Safe operating heights are clearly indicated on the sticker; and
 - c. Appropriate emergency numbers are listed in case of alarm, malfunction or certification has expired.
3. Fume hood alarm sticker:
 - a. Is present; and
 - b. Contains clearly listed instructions in case of an alarm situation.



4. Fume hood frame:
 - a. Has reference heights indicated that correspond to the heights identified on the fume hood certification sticker.
5. Fume hood sash:
 - a. Easy to operate;
 - b. Stable; and
 - c. Undamaged
6. Fume hood interior:
 - a. Clear of needless clutter;
 - b. Sufficient space that allows for safe handling of chemicals; and
 - c. Periphery equipment – such as gas nozzles, hoses, etc. – is not damaged.

5.2 Fume Hood Operations

When using a University of Toronto fume hood for the function of chemical containment and protection from chemical exposure the user should follow these procedures:

- The fume hood sash should:
 - Only be operated within of the safe operating range indicated on the fume hood certification sticker;
 - In some cases, such as setting up equipment or an experimental apparatus, it is permissible to have the fume hood sash fully open; however the fume hood sash should be closed to a safe working height upon completion of such activities.
 - Remain closed at any time the user or operator is not actively accessing the fume hood;
 - Only be adjusted when wearing appropriate gloves; and
 - Not be obstructed from opening and closing by obstacles in the fume hood or on the airfoil/frame.
- The fume hood airfoil should not be used to store materials or equipment.



- The fume hood face or space in-front of the fume hood should only be accessed by one individual at a time.
- Machinery or equipment that could significantly alter the flow of the fume hood should be not used within the fume hood unless the hood's solitary function is to house said machinery or equipment. This includes:
 - Large pieces of equipment that obstruct at least 1/2 of the fume hood bench;
 - Equipment that obstructs at least 1/3 of the fume hood bench and was added to the interior of the fume hood after the most recent certification;
 - Equipment that manipulates airflow patterns, such as fans or exhaust tubes from small air conditioning or fan units.

5.3 Fume Hood Care

A fume hood must be properly maintained by the user to ensure that at any given time, when the fume hood is to be used for chemical protection and containment, its safe function is not compromised. Thus, the following procedures should be followed by fume hood users and operators to help maintain the integrity of a fume hood:

- Storing materials in the fume hood:
 - Only materials relevant to ongoing research activities that occur within the fume hood should be stored in the fume hood and only in quantities that that serve the purpose of a single research session or experiment.
 - If more materials are stored in the fume hood than specified in the previous paragraph then:
 - Excess materials should be removed; or
 - The fume hood should be designated as a storage area and should not be used for any research or chemical safety.
- The fume hood sash should be kept free of:
 - Paper, writing or obstructions that block visibility to the interior of the hood; and
 - Obstructions that prevent easy opening and fully closing of the sash.
- Contamination:



- Any components of the fume hood (exterior or interior) such as the work bench, frame, sash, air foil, nozzles or taps that have potentially come in contact with a chemical compound (from a spill, contaminated PPE, etc.) should be appropriately cleaned to avoid inadvertent contact with skin.

5.4 Fume Hood Alarm Conditions

If a fume hood alarm sounds lower the fume hood sash until the alarm stops. If the alarm:

- A. Stops while the fume hood sash is still within the safe operating range indicated on the certification sticker, then work can continue in the fume hood with the sash open to any height within the safe operating range and which does not trigger further alarm; or
- B. Does not stop while the fume hood sash is still within the safe operating range indicated on the certification sticker, then:
 - 1. Discontinue use of the fume hood;
 - 2. Disengage and power down any heat sources in the hood;
 - 3. Cap any open vessels or close any compressed gas cylinders in the hood;
 - a. In a situation where a volatile or gaseous compound with acute and/or severe health effects cannot be capped or prevented from leaving its vessel, then immediately shut the sash, evacuate the laboratory and contact campus police; otherwise, continue to the next step.
 - 4. Close the fume hood sash completely;
 - 5. Indicate to individuals within the lab that the fume hood is malfunctioning;
 - 6. Leave a note on the fume hood that indicates it is out of order;
 - 7. Contact 8-3000 and inform them that the fume hood is in need of maintenance; and
 - 8. Inform your supervisor of the alarm.

5.5 Fume Hoods in Need of Service

If a fume hood requires maintenance due to an alarm situation or it fails any component of a User Safety Check, then it requires service before it can be put into use.

Maintenance can be scheduled by contacting:

- St. George – 416-978-3000



- UTM – 905-828-5301
- UTSC – 416287-7579

Recertification can be scheduled by contacting:

- St. George – 416-978-4467
- UTM – 905-828-5301
- UTSC – 416-208-5141

5.5.1 Recertification is required when:

- There is a problem with the certification sticker:
 - There is no sticker;
 - All sticker fields are not complete/filled;
 - The safe operating range listed on the sticker does not match the heights indicated on the fume hood frame;
 - The expiration date on the sticker has passed.
- The alarm sticker is missing;
- A new fume hood alarm has been installed or the existing alarm has been repaired.

5.5.2 Maintenance is required when:

- There was an alarm incident that required a call to campus police or 8-3000;
- There is visible damage to the fume hood sash that affects its structural integrity or mobility;
- Components of the fume hood cabinet are damaged in a way that compromises functionality or safety (i.e. gas valves, nozzles, etc.)

5.5.3 Housekeeping/user care may be required when:

- Due to obstructions in the hood, there is not sufficient room to safely handle chemicals;
- Visibility through the fume hood sash is obstructed;



- There is apparent staining or chemical contamination, such as a spill, on the any part of the fume hood; or
- There are damaged materials within the hood, such as a broken glass vessel.

6. Training

Any University of Toronto workers, students, volunteers or contractors must be trained in this standard if, in the course of their regular duties, they might use, operate or access a University of Toronto fume hood, or they directly supervise any individuals that may use, operate or access a University of Toronto fume hood.

7. Standard Revisions

On an annual basis, the University of Toronto Office of Environmental Health and Safety may evaluate this standard with respect to:

- Efficacy in:
 - Achieving communication;
 - Protecting the health and safety of workers; and
 - Maintaining regulatory compliance.
- Relevance and functionality of the standard with respect to regulatory requirements;
- Clarity of the standard and procedures to all responsible parties; and
- Feasibility of implementation and management of the standard.

If, upon evaluation, gaps are found with respect to the evaluation criteria, the standard will be revised in such a way as to correct such gaps.