

SAFE OPERATING PROCEDURE Fume Hood Maintenance and Use





EQUIPMENT:	Fume Hoods	REVISION NO.:	0
LOCATION:	ECC Research and Teaching Laboratories	REVISION DATE:	5/5/2016



1.0 PURPOSE

To outline the safe operation and required maintenance of fume hoods.

2.0 SAFETY PRECAUTIONS

PERSONAL Protective Equipment (PPE)		REQUIRED	RECOMMENDED
Safety Glasses or Goggles		x	
Respirator			x Depending on chemicals working with
Protective Gloves		x	
Footwear		closed toed footwear	

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Principal hazards include:
 A chemical fume hood consists of an enclosed working chamber with an exhaust ventilation system attached. 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/student from inhalation of and exposure to odorous and/or hazardous chemicals



3.0 TOOLS, EQUIPMENT & MATERIALS

As required for maintenance/repair

4.0 TRAINING & CERTIFICATION

All users must review this SOP, have had WHMIS training, and have completed all required inspections prior to starting. All work in fume hood must be done in accordance with safe practices for each technique

5.0 OPERATING PROCEDURES

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5.1	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. <ul style="list-style-type: none"> ● Class B; Flammable and Combustible Materials ● Class C; Oxidizing Materials ● Class D1 (a & b); Materials with Immediate and Serious Toxic Effects 		
5.2	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).		

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1. Substitute toxic chemicals with less hazardous materials whenever possible.
 2. No adjustments to the interior of the fume hood, (i.e. baffles) or to mechanical sash stops should be made.
 3. The sash of the fume hood should be kept closed except when making adjustments to equipment or actually carrying out manipulations in the fume hood. At those times the sash should be raised to its certified height based on face velocity testing.
 4. All equipment and materials should be placed at a minimum of six inches back from the face of the hood in order that these items not obstruct the movement of air into the hood.
 5. It is recommended that blocks or racks be used to elevate equipment one or two inches off the hood deck surface in order that air flow easily around all apparatus.
 6. Never put your head inside a hood while operations are in progress and potential contaminants are being generated.
 7. Use extreme caution with ignition sources inside a fume hood. Electrical receptacles or other spark sources shall not be placed inside the hood when flammable liquids or gases are present.
 8. Keep the interior of the fume hood clean and tidy. Clean up any spills immediately.
 9. Keep storage in the fume hood to a minimum. The hood should not be used as a storage area for chemicals nor should it be overloaded with unnecessary equipment and materials. The presence of these materials can seriously affect the airflow in the fume hood.
 10. Do not use the fume hood as a waste disposal mechanism (e.g., for evaporation of chemicals). Refer to the Hazardous Wastes Procedures for instructions on waste disposal.
 11. Foot traffic past the face of the fume hood should be kept to an absolute minimum while it is being used. Air flow caused by such traffic can seriously impede the operation of the hood and cause gases and vapors to be drawn out of the hood and into the laboratory.
 12. It is recommended that chemicals and amounts used should be recorded in a log book, dedicated to one fume hood, in order that appropriate monitoring protocols may be used.


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6.0 INSPECTION REQUIREMENTS

6.1	Emergency and Scheduled Maintenance of Fume Hoods is the responsibility of Physical Plant and all other inquiries regarding these matters should be directed to that department
6.2	In accordance with CSA Standard Z316.5-94, every six months the baffle(s), sash and interior surfaces of fume hoods shall be cleaned as applicable by the user.
6.3	Every twelve months, the maintenance schedule shall include the following (as applicable): <ul style="list-style-type: none"> ● Inspect the sash mechanism for corrosion and damage; ● 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; ● Check the stability and condition of the discharge stack; ● 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;

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6.4	<p>Face Velocity and Containment Testing</p> <p>Fume hoods must be tested for minimum control functions and face velocity as follows:</p> <ul style="list-style-type: none"> ● After new installation; ● After any repair or modifications are made to the fume hood or exhaust system; ● At least once per year. <p>Air velocity and air flow testing will be carried out by an external contractor according to the above schedule and also by request of the Department Head/Principal Investigator or Physical Plant.</p> <p>Testing will include the following:</p> <ul style="list-style-type: none"> ● Average face velocity of the fume hood when the sash is fully opened; ● Determination of sash height at which the average face velocity is 100 fpm, unless otherwise specified; ● Smoke test to determine air flow patterns and leakage.
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