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## 1.0 PURPOSE

A Chemical Fume Hood (CFH) consists of an enclosed work area which features an exhaust ventilation system. Air is drawn in through the face opening, ventilating the work area. The flow of air captures any gases, vapors, aerosols or particulates within the enclosure and exhausts them. All CFHs at the Keenan Research Centre Biomedical Sciences (KRCBS) vent air directly out of the facility. Laboratory fume hoods are primarily used to protect users from hazardous or odorous chemicals.

Chemical Fume hoods are not Biological Safety Cabinets and should not be used to protect users from bioaerosols.

## 2.0 PROCEDURE

Do not perform work in a malfunctioning CFH. Ensure that the CFH is on before commencing work. CFH at the KRCBS should be kept running at all times. It is highly recommended that the work with following GHS hazard classes should be performed in CFHs.

- GHS01 -Self-Reactive substances
- GHS02 - Flammable and Combustible Materials
- GHS03- Oxidizing Materials
- GHS06 and GHS08- Materials with Toxic Effects
- GHS05- Corrosive Materials

Always ensure you consult Safety Data Sheet before using any chemical.

### **Work procedure-**

- A CFH does not provide absolute containment or protection. Appropriate PPE should always be worn when performing operations in a CFH.

- Rapid movement in and around the CFH should be avoided to prevent any cross-drafts, which can reduce the effectiveness of the CFH.
- Always work with the sash of the CFH at a maximum height of 12 inches. All operations within the CFH should be done at least 6 inches back from the sash.
- Never put your head inside a CFH while operations are in progress.
- Keep the interior of the fume hood clean and tidy. Perform work on benchcotes if possible.
- Clean up any spills immediately.
- 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. If materials must be stored in the hood (e.g., in-use waste containers) place items adjacent to a side wall. To ensure proper function, the baffles at the lower rear of the hood and the airflow through the front opening must not be obstructed.
- Do not use ignition sources in the CFH when flammable or combustible materials are in a CFH.
- CFHs within the KRCBS should be left running at all times. They aid in exhausting air from the facility and help keep laboratory areas under negative pressure. In the event of a fire, CFHs will assist in removing smoke from the building.
- Perchloric acid at concentrations >70% must not be used in standard fume hoods. Heated or concentrated perchloric acid must be handled in specially designed hoods with wash down features to prevent formation of explosive perchlorates. Contact Research Biosafety Officer before using perchloric acid.

***CFH certification and maintenance-***

- All CFH must be tested on an annual basis to ensure that the face velocity reading is at least 80-120 feet per minute (fpm).
- Clean the CFH with regular soap and water regularly.

**3.0 DEFINITIONS**

Term/Acronym	Definition
<b>CFH</b>	Chemical Fume Hood
<b>SDS</b>	Safety Data Sheet
<b>GHS</b>	Global Harmonized System

#### 4.0 REFERENCES

CSA Standard Z316.5 - 94, Fume Hoods and Associated Exhaust Systems

NFPA 45, Fire Protection for Laboratories Using Chemicals

O. Reg. 851 for Industrial Establishments, Section 128 (3)

Version	Approval/Sub-approval body	Approval date
01	Director, Research Facilities	October 6, 2022
02		
03		

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