Standard Operating Procedure

Ductless (filtering) Chemical Fume Hoods

**This SOP template is not complete until: 1) Lab specific information is entered into the box below.**

**2) Lab specific protocol is added to the protocol section.   
3) SOP has been signed/dated by the PI and lab personnel**

Always refer to the original owner’s manual for device specific information. The following document can be used to create a lab specific SOP for fume hood use.

Section 1 – Lab-Specific Information

| **Building/Room(s) covered by this SOP:** | Click here to enter text. |
| --- | --- |
| **Department:** | Click here to enter a date. |
| **Principal Investigator Name:** | Click here to enter text. |
| **Principal Investigator Signature:** | Click here to enter text. |

Ductless fume hoods are designed to remove potential hazardous fumes and vapors from the work area as the exhausted air passes through absorbent material, such as activated charcoal. Filtered air is then recirculated back into the laboratory.  Occasionally, REM is asked to approve purchases of ductless, filtered fume hoods for use in research labs. We do not recommend ductless fume hoods. We do not believe ductless fume hoods provide reliable protection against chemical exposure, and think they may, in fact, give workers a false sense of security. Under a rigid set of guidelines these fume hoods may be used to provide protection to users in a limited set of circumstances This SOP will provide information to assist in the training of laboratory personnel in safe operation and maintenance of ductless fume hoods. Ductless chemical fume hoods may not be used in lieu of a biological safety cabinet.

Section 2 – Process

The following safety guidelines should be followed when using ductless fume hoods:

Prior to use

* Read the manufacturer’s manual on proper use of the fume hood. Pay particular attention to the warning and limitations that are provided.
* Position the fume hood location away from high traffic areas, building ventilation and other areas that could create air turbulence near the sash reducing effectiveness.
* Ensure that the fume hood fan has the proper flow.
* Place any chemical container or equipment generating dusts, mists or fumes away from the sash so that the fume hood has the ability to capture the contaminant.
* Ensure that the fume hood is located in a laboratory space that has a ventilation rate of at least 6 air changes per hour. DO NOT use in spaces not designed for chemical uses such as offices. This air may be recirculated to other occupied areas rather that exhausted to the outside.
* Check to see that filters are appropriate for the chemicals in use. Filters must be chosen for specific chemicals (or particles) and may not filter other compounds effectively.
* Keep a log of filter changes and the next filter replacement date
* Post the chemicals that are permitted in the fume hood.
* Ensure that the filters have not exceeded their recommended lifetime.
* The use or evaporation of large amounts of chemicals may saturate the filter and make it less effective.
* Consult with REM prior to using highly toxic (Permissible Exposure Limit <100 ppm) materials.

During Use

* Ensure that the fan remains in operation during the entire procedure.
* Place material at least 6 inches from the sash to ensure proper containment.
* Keep chemical containers closed when not is use.
* Move arms slowly to minimize disturbances to the airflow. Keep your head out of the hood.
* Use only small amount of chemicals at one time. Do not evaporate chemicals in the fume hood.
* Do not use chemicals that may create a flammable atmosphere. Do not use corrosive material which may degrade the filter.
* Do not conduct reactions involving high pressure and heat as these may damage the filter system.
* Cease work if improper airflow is suspected or a flow alarm (if provided) is triggered.

After use

* Close all chemical containers and ensure that any chemical reactions have been terminated. Clean up any spills.
* Move all containers at least 6 inches from the sash to ensure containment.
* Run the fan for at least 3 minutes to remove any residual chemicals or odors.
* Close the sash.
* Wash hands after removing gloves.

Section 3 – Hazards

|  |  |  |  |
| --- | --- | --- | --- |
| **Head:** | minimal hazard | **Body:** | minimal hazard |
| **Eyes/Face:** | chemical exposure | **Feet:** | minimal hazard |
| **Hands:** | chemical exposure | **Respiratory:** | minimal hazard |
| **Other:** | Ductless fume hoods should be place at the appropriate height to eliminate any ergonomics work issues. | | |

Section 5 – Designated Areas

Ductless fume hoods should only be located on a stable surface within a laboratory. Do not use ductless fume hoods in a non-laboratory area such as an office or classroom unless the air exchange rate is at least 6 air changes per hour and is totally exhausted to the outside. Position the fume hood location away from high traffic areas, building ventilation and other areas that could create air turbulence near the sash reducing effectiveness.

Add lab specific training here

Section 6 – Engineering Controls and Personal Protective Equipment (PPE)

|  |  |  |  |
| --- | --- | --- | --- |
| **Head:** | none | **Body:** | lab coat |
| **Eyes/Face:** | safety glasses | **Feet:** | closed-toe shoes |
| **Hands:** | nitrile gloves | **Respiratory:** | none |
| **Other:** |  | | |

Section 7 – Spill and Accident Procedures

Immediately evacuate area and ensure others are aware of the spill. If there is an imminent threat of a fire, pull the nearest fire alarm station to evacuate the building and **dial 911**. If personnel are exposed and need medical assistance, **dial 911**. If the spill is minor and does not pose a threat to personnel, contact REM at 49-40121 during normal business hours (Monday – Friday, 7 AM – 4 PM) for spill cleanup assistance (dial 911 if spill occurs after hours and assistance is needed).

Section 8 – Upkeep and Maintenance Procedures

Inspect the fume hood for proper operation on a regular basis. Change the filters as specified or at least on an annual basis. Keep a log of the date of filter change and type(s) of filters installed. Ensure that replacement filters are appropriate for the chemicals used.

Section # – Protocol

Add lab specific protocol here

**NOTE:** Any deviation from this SOP requires approval from Principal Investigator.

Section 4 – Required Training for use

Trainingis required before any work is done using ductless fume hoods. This SOP may count as training. Lab specific training may also be required.

Add lab specific training here

Section # – Documentation of Training **(signature of all users is required)**

The Principal Investigator must ensure that all laboratory personnel receive training on the content of this SOP.

**I have read and understand the content of this SOP:**

| **Name** | **Signature** | **Date** |
| --- | --- | --- |
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