



Ductless Fume Hood Policy

I. Policy

Ductless fume hoods are designed to remove hazardous fumes and vapors from the work area by passing the exhaust air through a filter and/or adsorbent, such as an activated charcoal. Because of the potential for unregulated use and personnel exposure through a "breakthrough" and desorption of vapors from the hood's filtering system, EH&IS recommends using ducted hoods wherever possible. Ductless hoods should be used only when ducted hoods cannot be reasonably utilized or accommodated

II. Authority

California Code of Regulations, Title 8, Section 3203 (Injury and Illness Prevention); Section 5191 (Occupational Exposure to Hazardous Chemicals in Laboratories); 5154.1 (Ventilation Requirements for Laboratory-Type Hood Operations)

III. Scope

This Policy applies to all University employees, volunteers, students and visitors who require use of fume hoods to control exposure to hazardous or odorous chemicals.

IV. Definitions

Activated Charcoal Filters These filters use a form of carbon that has been processed to make it extremely porous and thus have a very large surface available for adsorption. The lifetime and efficiencies of activated charcoal filters are variable and should only be used with very low hazard chemical.

Breakthrough This is a specific condition where materials normally adsorbed by the charcoal make it through the filtration system into the surrounding environment. Breakthrough can occur if a spill of a VOC overloads the filter, the development of pores or channels in the filter media, or if filters are not maintained allowing a release to the surrounding environment. Ductless hoods must be equipped with a monitoring system to alert users that a breakthrough has occurred.

Ductless Fume Hood This type of hood is mainly used where the design of a building does not permit the fitting of external ductwork; these units generally have a fan mounted within the soffit (top) of the hood, or beneath the worktop. Air is sucked through the front opening of the hood passing through a filter, prior to exhausting into the workplace. The hood compartment atmosphere is filtered through a HEPA filter or activated charcoal or both depending on the materials used in the hood.

Fume Hood A fume hood is a large piece of scientific equipment common to science laboratories that is designed to limit a person's exposure to hazardous and/or unpleasant vapors/fumes/mists. Air is removed from the workspace and dispersed into the atmosphere.

HEPA Filters High Efficiency Particulate Air filters that can remove at least 99.97% of airborne particles, 0.3 micrometers (μm) or larger in diameter.

V. Implementation

A. Department/Principle Investigator (PI)

1. Request approval from Environmental Health and Instructional Safety for the purchase of a ductless fume hood.
2. Identify the chemicals that will be used and then determine the appropriate filters by consulting with the manufacturer and EH&IS. Ductless fume hoods are limited to certain chemicals with limits varying between manufacturers.
3. Monitor filters and notify EH&IS if problems arise.
4. Using the manufacturer's recommendation and hood usage, develop a regular filter changing schedule.
5. Work with EH&IS to label the hood to indicate the permitted chemical classes.
6. Develop protocol to safely terminate use of the hood if monitors indicate filter breakthrough.

B. Dean/Department Chair

1. Approve purchase and use of a ductless fume hood by signing the Ductless Fume Hood Application.

C. Director, Environmental Health and Instructional Safety (EH&IS)

1. Responsible for administering and implementing this Policy
2. Consult with PI or Department on the proposed uses of ductless fume hood.
3. Approve Ductless Fume Hood Application and verify that the proposed hood is appropriate for the listed chemicals.
4. Assist departments in labeling the hood with the approved chemical classes.
5. Develop schedule for filter changes. Arrange filter changes, annual certification and maintenance. Dispose of filter.
6. Periodically inspect the hood for approved chemical use.
7. Consult with the college dean or chair if unsafe practices and/or inappropriate chemicals are being used. Close down the hood when appropriate.

VI. Program

A. Choose the Appropriate Hood and Filters

Use the Ductless Hood Application to help determine the correct hood for the application and chemicals proposed. Recommendations can be found on the reverse side of the application.

1. The Department or PI will work with EH&IS to identify the chemicals that will be used in the hood.
2. Work with the manufacturer and EH&IS to determine the appropriate filters and monitoring system.

B. Approval

1. Complete the Ductless Fume Hood Application.
2. Obtain approvals from the Department Chair, Dean and EH&IS.
3. Maintain a copy of the approved application in EH&IS and affixed to the hood.

C. Monitoring and Maintenance

The fume hood must be continuously monitored during use to ensure that all filters are working efficiently and that there is no breakthrough of chemicals. Hoods equipped with HEPA filters must have equipment that determines when the filters need to be changed.

Should there be a chemical breakthrough, the PI must immediately shut down operations, remove or secure all open chemicals from the hood, and call EH&IS for maintenance/filter change.

D. Audit/Inspections

1. EH&IS will inspect each hood once a semester and more frequently as necessary.
2. Discrepancies, including unsafe practices and the use of unapproved chemicals, will be addressed immediately and action taken after consulting with the Department Chair and College dean.

Responsible Executive:

Vice President for Administration and Finance

Responsible Office:

Environmental Health and Instructional Safety

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