



Lab Notes

July 2001

IUPUI ENVIRONMENTAL HEALTH AND SAFETY

Check Your Fume Hood.....

By Heather Strange

The annual lab fume hood inspections for the IUPUI campus have recently been completed. Overall, the Department of Environmental Health and Safety (EHS) tested 438 fume hoods campus wide. An overview of the inspections and a few reminders to last you through the year follows.

The EHS department tests fume hoods based on the average face velocity measured in feet per minute. The minimum face velocity that is acceptable is 80 feet per minute. This insures proper airflow and keeps potentially harmful chemical vapors contained inside the unit. If you do not have a velocity gauge as part of your unit, you can do a simple test yourself to make sure you have adequate flow. Simply tape a strip of tissue paper to the bottom edge of your sash. The airflow should be adequate enough to have some inward pull on the tissue paper. Just leave this strip of paper there year round to use as an indicator of airflow into the hood.

It may also be noted that while an acceptable face velocity should be at least 80 feet per minute, it is not desirable to have excessive air flow in a fume hood. Excessively high air velocities can cause turbulence that can lead to chemical vapors being released back into the room.

All fume hoods that passed the minimum requirements were posted with a yellow sticker showing the maximum height for your fume hood sash. It is important to keep the sash at or below this level because raising the sash will often lower the airflow

velocity. This could potentially allow vapors to escape the hood and compromise your health.

If the fume hood in your laboratory was one of the hoods that did not meet the minimum velocity requirement, a caution sign was left on the fume hood with a telephone number to call for repair. These numbers vary depending on your location on the campus. A list of Campus Facility Services numbers (see page 2) has been provided with this article. The maintenance crew should be called if there are any problems relating to the function of the fume hood, such as low airflow. If you have any other questions regarding the use of the fume hoods or would like another test completed, you can call the EHS Lab Safety Manager at 274-2829.



If you have a fume hood in your lab, please take a moment to make sure it has recently been tested. EHS tries to keep an updated list of all the fume hoods on campus; however, things are continuously changing. New labs are being opened while others are being

closed or remodeled. If you notice that your hood was missed in this year's inspection, please contact the EHS department at 274-2005.

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One final reminder on fume hoods. There are many similarities between fume hoods and biological safety cabinets. They do, in fact, serve different purposes.

Check Your Fume Hood.....

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While both are used to protect us, biological safety cabinets are used for microbiological materials. For biological safety cabinets, the air is filtered through a very efficient HEPA filter (to remove microbes) and is often returned to the room while chemical fume hood air is exhausted to the outside of the building (usually unfiltered). The EHS department does not test biosafety cabinets. If you would like reference materials in regard to, or a list of contractors who certify biosafety cabinets, please contact the EHS Lab Safety Manager.

Here are a few fume hood safety reminders...

- Always make sure the hood is operating prior to use.
- Keep all work and apparatus at least 6 inches inside the face of the hood.
- Keep the hood sash closed except when accessing materials inside of the hood.
- Always operate the hood with the sash at or below the height that it is indicated on the testing sticker.

- Keep the

slots and baffles free of obstruction by apparatus or containers.

- Do not put your head in the hood when contaminants are being used.
- Any processes that may generate air contaminants at or above the TLV should be conducted inside a hood.

Campus Facility Services Maintenance Contacts

Zone 1	278-1420
-Engineering Science and Technology Buildings	
Zone 3	278-1940
-Cancer Research Institute, Emerson Hall, Medical Research Facility, Medical Science Building	
Zone 4	278-1800
-Dental School, Fesler Hall, Oral Health Research	
Zone 5	278-3900
-Clinical Building, Rotary Building, Riley Research	
Riley & University Hospital	274-0995
Wishard Hospital	630-7431

NEW EMPLOYEE TRAINING SCHEDULE

Union Building Hoosier Room* - 2nd Floor

General Safety-For all new employees. **Jul. 2, 9, 16, 23*, 30, 2001**
10:00- 12:00 Noon **Aug. 6, 13, 20*, 27, 2001**
Sep. 10, 17*, 24, 2001
Oct. 1, 8, 15, 22, 29, 2001

Exceptions: Dates marked with an "" will be held in the Union Building North Wing, Human Resources, Room 372

Union Building (North) - Room 542

Bloodborne Pathogens-For all employees who may be exposed to human blood, body fluids or tissue. Session held the 2nd & 4th Tuesday of every month from 8:30 - 9:30 A.M. **July 10 & 24, 2001**
August 14 & 28, 2001
September 11 & 25, 2001
October 9 & 23, 2001

Chemical Lab Safety- For all employees who work with chemicals in laboratories. **July 10, 2001**
2001 **August 14,**
Sessions held the second Tuesday of every month from 9:30 - 11:30 A.M. **September 11, 2001**
October 9, 2001

Decommissioning Refrigeration/Freezer Equipment

By Kevin Mouser

In 1990, the United States Congress enacted a major overhaul of the Clean Air Act, the nation's air pollution standards, which were originally promulgated in 1970. The provisions of the 1990 amendments, in many cases, are just now being phased into use.

A major chapter of the amendments include regulations that target the protection of the stratospheric ozone layer of the earth's atmosphere. Older types of refrigerants used in air conditioners, refrigerator and freezer units, commonly known as freon, have long been implicated in the damage to the earth's ozone layer with a whole host of global concerns.

The stratospheric ozone protection requirements of the 1990 amendments now require that any type of refrigeration equipment have the refrigerant removed prior to the unit being sent for reclamation or disposal. These requirements apply to any type of refrigeration unit including dorm-style refrigerators. The regulation further requires that the refrigerant be managed in a fashion that prevents its release to the atmosphere.

On the IUPUI campus, there are two options available currently for the disposal of refrigeration equipment that is no longer needed. In the event the unit is still operational, the unit may be referred to the Campus Surplus Property Program by contacting Steve Staggs at 4-7753. If the unit is found to be suitable for the Surplus Property program, it will be either redistributed for use on campus or sold at auction.

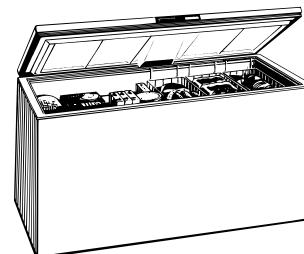
If the freezer or refrigeration unit has been used to store radioactive, chemical or biohazardous or potentially infectious materials, please ensure the unit is thoroughly cleaned and, if appropriate, decontaminated before the unit is referred for disposal or redistribution. The unit should be

labeled as decontaminated afterwards. Please ensure that all universal biohazard and/or radioactive hazard labels are removed from the unit before it leaves the lab.

In the event the refrigeration unit is not functional or is not suitable for Surplus Property, it is the responsibility of the laboratory in possession of the unit to complete the arrangements for the proper removal and disposal of the refrigerant. Currently, two options are available as follows:

1. Contacting your Campus Facility Service (CFS) Zone Maintenance office. For a fee typically between \$75.00 and \$100.00, representatives from CFS will come to your location, remove the unit from the lab, and take it to a zone maintenance shop where the refrigerant will be removed and properly discarded. The unit will then be sent for scrap metal reclamation. CFS offers this service for most units with the exception of sub-zero freezer units and units containing an uncommon or unusual refrigerant.
2. Contacting a private refrigeration repair vendor to come to your location to remove the refrigerant. CFS will still need to be contacted to remove the unit from the lab in order to send it for scrap metal reclamation. CFS reports that using an outside vendor typically costs between \$300.00 and \$350.00.

For additional information, please contact your CFS Zone Manager or call 4-4351.



Cancer risk in biological laboratory researchers.

At the end of the 1980s, several cancer clusters were observed in biological research laboratories. Over time, biological research and the technologies used have been diverse and have involved a wide range of mutagenic or carcinogenic chemical, physical and biological agents.

A literature study was conducted by Bernard Rachet et. al. to further evaluate cancer risks for biological lab workers. The authors reviewed 45 published studies on cancer risk among biological research personnel and workers in closely related fields, and numerous reports based on routinely collected data.

Their conclusions indicated that biological research could be associated with an elevated risk for pancreatic cancer, brain tumors, and certain hemopathies. A common limitation of available studies was low statistical power and the absence or inaccuracy of data on individual past exposure.

Overall, this study suggests a low overall risk of cancer, albeit a higher risk may be suggested for cancers of the pancreas (risk ratios ranging from 0.5 to 6.3) and brain (.07-9.4), and for non-Hodgkin's lymphoma (0.6-51.5). Multiple past exposures need to be assessed more precisely and need to take into account known confounders. The complete article may be accessed at the following reference: AM. J. Ind. Med. 38:651-665, 2000.

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