



Let's Clear the Air On Indoor Air Quality

By Stephanie Rainey

You may have noticed that indoor air quality (IAQ) has been a hot topic recently with dozens of articles showing up in nearly every medium, from local newspapers to network television. While the information is factual in content, it can also be, at times, sensational in presentation.

To help clear the air, so to speak, REM will be presenting a series of articles in upcoming newsletters that will focus on:

- Defining IAQ
- What individuals can do to improve their own indoor air quality
- Explain what staff members might expect to happen if they feel there is a problem with their air at work.

So, just how is indoor air quality defined? Indoor air quality pertains to the quality of air within an enclosed environment and is a composite of many factors: temperature, humidity, the level of carbon dioxide gas (what we exhale), and the amount of airflow in an area, just to name a few.

Even cavemen had to contend with indoor air quality issues. They had to build fires right in the middle of their living space, you know. They discovered the benefits of directing the smoke from those fires toward the outside, rather than allowing it to

FAST STAT: According the Environmental Protection Agency (EPA), over the past ten years, more than one-half of all documented IAQ complaints were attributed to a lack of adequate ventilation.

accumulate within the living area. They quickly learned a valuable lesson: smoke...bad, fresh air...good!

Because there are no Occupational Safety and Health Administration (OSHA), Environmental Protection Agency (EPA) regulations, state or federal laws explicitly defining the values for indoor air measurements, acceptable limits can be rather subjective. Here at Purdue, REM has combined years of experience and research from departmental staff, industry professionals and consensus groups to come up with practical exposure limits adequate for human health and comfort, and that can be sustained with our mechanical building systems.

Let's take a minute to explore a 'drafty' room. Is a drafty room bad for you? Not necessarily, air movement is a result of the air exchange taking place. In other words, it's the action of moving the used air out and

introducing fresh air into the space. Have you ever been in a room that made you feel sluggish or had a peculiar odor? If the air is kept circulating, you might notice a significant improvement.

In the next installment, we will focus on a 'do-it-yourself' approach to improving air quality at work or home. These techniques will not require any special knowledge, elaborate mechanical systems, applying quantum physics, or use of meteorological cycles. Some problems with poor air quality can be created by the occupants themselves and with some slight modifications, can be corrected and may even produce some noticeable, positive changes right away.

If you have a questions or concern about the indoor air quality in your work space, please contact Lila Albin, Senior Industrial Hygienist, at lcalbin@purdue.edu or at 40204. ■

Household Hazardous Waste... You Probably Have It; How to Dispose Of It

By Brian McDonald

Overview

Many of the household products you use at home can be considered hazardous waste when you decide to discard them. Leftover household products that contain corrosive, toxic, ignitable, or reactive ingredients are considered to be “household hazardous waste” or “HHW.” Products such as paints, cleaners, oils, pesticides, and batteries contain hazardous ingredients and require special care when disposing of them. In the State of Indiana, Solid Waste Districts offer a variety of options for safely managing HHW.

The options of reduction, reuse, recycling, and disposal – listed in order of EPA’s preferred waste management hierarchy – are all-important tools to safely manage HHW. REM has similar programs in place for the management of the University’s hazardous waste.

Reduction at Home

Consider reducing your purchasing of products that contain hazardous ingredients. Learn about alternative methods or products – without hazardous ingredients – for some common household needs.

List of Common HHW Products

The following list shows common household items containing potentially hazardous ingredients that might be found in your garage, basement, or other storage space in your home.

Cleaning Products

- Oven cleaners
- Drain cleaners
- Wood and metal cleaners and polishes

- Toilet cleaners
- Tub, tile, shower cleaners
- Bleach (laundry)
- Pool chemicals

Indoor Pesticides

- Ant sprays and baits
- Cockroach sprays and baits
- Flea repellents and shampoos
- Bug sprays
- House plant insecticides
- Moth repellents
- Mouse and rat poisons and baits

Automotive Products

- Motor oil
- Fuel additives
- Carburetor and fuel line injection cleaners
- Air conditioning refrigerants
- Starter fluids
- Automotive batteries
- Transmission and brake fluid
- Antifreeze

Workshop/Painting Supplies

- Adhesives and glues
- Furniture strippers
- Oil or enamel based paint
- Stains and finishes
- Paint thinners and turpentine
- Paint strippers and removers
- Photographic chemicals
- Fixatives and other solvents

Lawn and Garden Products

- Herbicides
- Insecticides
- Fungicides/wood preservatives

Miscellaneous

- Batteries
- Mercury thermostats or thermometers
- Fluorescent light bulbs
- Driveway sealer

Other Flammable Products

- Propane tanks and other compressed gas cylinders
- Kerosene
- Home heating oil
- Diesel fuel
- Gas/oil mix
- Lighter fluid

Disposal Options

Certain types of HHW have the potential to cause physical injury to sanitation workers, contaminate septic tanks or wastewater treatment facilities if poured down drains or toilets, and present hazards to children and pets if left around the house. Follow the labels directions for disposal to reduce the risk of products exploding, igniting, leaking, mixing with other chemicals, or posing other hazards on the way to the transfer station.

HHW Facts and Figures

- Americans generate 1.6 million tons of HHW per year.
- The average home can accumulate as much as 100 pounds of HHW in the basement and garage and in storage closets.
- During the 1980s, many communities started special collection days or permanent collection sites for handling HHW. In 1997, there were more than 3,000 HHW permanent programs and collection events throughout the United States.

Opportunities

To avoid the potential risks associated with household hazardous wastes, it is important that you always monitor the

Preventing Cross Contamination Through the Use of Good Laboratory Hygiene

By Robert Golden

Gloves are very important personal protective equipment needed to prevent exposure to chemicals as well as biohazardous materials. To prevent cross contamination, you should not wear your protective equipment, including gloves outside the laboratory area. Doing so can contaminate surfaces (door handles, vending machines, elevator buttons, etc.) that are touched by unprotected hands. Other building occupants know laboratory gloves are used in conjunction with hazardous materials and seeing gloves on people outside of laboratory areas quite often causes concern. Here are some good practices taken from University guidelines you should follow to prevent cross contamination:

Chemical Hygiene Plan:

Contaminated Clothing and Protective Equipment

Where splash or spill of hazardous chemicals on clothing or protective equipment occurs, the clothing/equipment should be removed and placed in a closed container which prevents dispersion of the hazardous chemical.

Biosafety Manual:

Contact Route

It should be recognized also that dispersal of contaminants to other surfaces could occur by their transfer on the gloves of the laboratory worker.

A. Standard Microbiological...

8. Laboratory coats, gowns, gloves, or uniforms must be worn in the laboratory. Laboratory



clothing or gloves must not be worn in non-laboratory areas.

Animal Biosafety Level 1

3. The wearing of laboratory coats, gloves, gowns or uniforms in the animal room is recommended. Coats and gloves worn in the animal room are not worn in the laboratory or in other areas.

Working in a Biosafety Cabinet

8. Wear a lab coat or disposable gown while working with biohazardous agents. Do not wear potentially contaminated clothing outside the laboratory.

Radiation Safety Manual:

9.2 Procedures and Rules for the Safe Use of Radioactive Material

7. Protective equipment must not be worn outside the laboratory unless it has been monitored and found to be free of contamination. Gloves, while providing protection to the user, can spread contamination if worn outside the laboratory.

If you have any questions regarding the safe use of protective gloves contact REM at 41496, or email, rwgolden@purdue.edu. ■

Waste Minimization

By Brian McDonald

Purdue University is committed to preserving a balance between protecting the health of people and the environment, while accommodating increasingly sophisticated and productive research operations. The Chemical Management Committee (CMC) requires each principal investigator/generator to certify their waste minimization efforts annually.

Waste minimization is any action that reduces the amount and/or toxicity of chemical wastes that must be shipped off-site for disposal as hazardous waste. In 2004 some of the Pollution Prevention and Waste Minimization Programs at Purdue have had the following results:

- 90,000 contaminated wipes were reused through a laundering program
- 40,000 fluorescent lamps were sent for recycling
- 4000 gallons of used oil were recycled
- 1100 computer monitors were sent for recycling
- 500 gallons of spent solvent from parts washers were reused in another product.
- 100 pounds of elemental mercury were sent for recycling
- 71 mercury thermometers have been replaced with non-mercury thermometers

Waste prevention and minimization are as consequential to economics as they are to environmental protection and human health and safety. They are also important aspects of education. Emphasizing environmental protection, health, and safety to all faculty, staff and students is a clear responsibility at

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all levels. Achievement of waste prevention and reduction are essential functions of the University. The concept of “less is better” can be the norm while increased protection of human health and the environment, as well as real cost savings are the benefits.

For more information on how to reduce waste and implement pollution prevention programs in your area contact Brian McDonald at bnmcdonald@purdue.edu or by phone at 63712. ■

Welcome New Staff

Craig Lewis attended the School of Fire Science in Indianapolis. He previously worked for Koorsen Protection Services in Lafayette. Craig and his wife have a 6-year-old daughter along with a child on the way. He enjoys boating and serves as a Volunteer Firefighter for Wabash Township.

Toby Yates lives in Delphi with his wife and two daughters. Toby enjoys woodworking, motorcycling, and coaching softball.

Dennis Craig brings experience from Koorsen Protection Services as well as certification in welding from Ivy



New members of the Fire and Safety Equipment Team are: (L-R) Craig Lewis, Toby Yates, and Dennis Craig.

Tech College. He and his wife, Rita, have a dog and cat. Dennis enjoys riding motorcycles and camping. ■

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use, storage, and disposal of products with potentially hazardous substances in your home. Below are some tips for you to follow at home:

- Use and store products containing hazardous substances carefully to prevent any accidents at home. Never store hazardous products in food containers; keep them in their original containers and never remove labels. Corroding containers, however, require special handling.
- When leftovers remain, never mix HHW with other products. Incompatible products might react, ignite, or explode, and contaminated HHW might become non-recyclable.
- Remember to follow any instructions for use and disposal provided on product labels.
- Call the Wildcat Creek Sanitary District Office at 423-2858 for instructions on proper use and disposal and to learn about local HHW drop off programs and upcoming collection days. ■

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