

Chemical Safety at Home

Mark Banister

In May of this year, the first county-wide household hazardous waste pick-up event in 20 years took place. I and several other Carnegie Mellon volunteers helped out at the event. This made me more aware of all the hazardous materials present in our homes, and of the problems that could occur when these items are not used and stored properly. I thought I'd take this opportunity to mention some things that will make your home and your family safer from the chemical hazards that may be present.

- First, remove and properly dispose of all outdated chemicals and damaged containers of hazardous chemicals. Other household waste days are planned for this year for this purpose.
- If you change you oil yourself, take the old oil to an oil change garage--they will take the oil and recycle it. Do not pour it onto the street or ground!
- Use caution when handling cleaning materials. Ammonia and bleach react to produce hazardous chlorine gas.
- Mixing incompatible drain cleaners can release harmful gases and great heat. Never look into a drain when drain cleaner has been applied. It can bubble up and splash a corrosive material into your eyes. If you smell a strong sulfur odor after using a drain cleaner, open your windows at once and evacuate.
- Be careful using pesticides. They may cause illness or even death to pets or children. Observe all precautions if using pesticides on vegetables, as you may end up eating something bad for you!
- Always store gasoline in approved containers and always turn off your engine when "filling up". A spark from the engine may ignite gasoline vapors.
- Always use paint strippers in a very well ventilated area. The solvents used are often quite hazardous.
- Always store oil based paints and paint thinners away from flame or spark sources, such as hot water heaters.

Awareness of the hazards of common household items is the key to keeping your home and family safe.

Glassware Safety

Jeff Harris

Carnegie Mellon has hundreds of labs that use glassware, all with the potential for serious injury if it is not used properly. Here are a few "Best Practices" to follow when handling laboratory glassware:

1. Visually inspect your glassware for flaws, before each use. The wrong time to find a flaw is when you are stirring, heating, or mixing.
2. Dispose of broken glass in heavy walled cardboard boxes.
3. Glassware should be stored on shelves so that the lighter items are on the top and heavier items are on the bottom shelves.
4. Thoroughly clean glassware before and after use. Soaking is acceptable, but active washing produces the best results.
5. If you use a solvent to clean & dry glassware, empty it into an appropriate hazardous waste container and not the sink.
6. Use protective carriers to transport glass bottles of reagents.
7. All glassware to be evacuated should be heavy-walled, taped, and/or in a protective jacket. This also applies to glassware under vacuum, which could implode.
8. When cutting or fire polishing tubing & rods, wear appropriate gloves. Also use heat protective gloves when handling HOT glassware.
9. Use a lubricant or wear protective gloves when inserting glass tubing into stoppers, or use expanded bore stoppers. This has been the source of many injuries here at CMU. Note: technique counts here, so hold glass tubing to the shortest length when inserting .
10. A balanced center of gravity is important when placing glassware on a ring stand.

Construction and Indoor-Air-Quality

Madelyn Miller

Environmental Health and Safety (EH&S) works closely with Facilities Management Services (FMS) before and during renovation projects. Together we attempt to make sure that indoor air quality is as good as it can be. FMS does construct containment for nuisance dust or will alter the work schedule to prevent exposure to the campus community. However, when

there is a need to demolish existing interior walls, even the most conscientious craft worker cannot keep dust out of occupied spaces. Construction in occupied spaces usually inconveniences their occupants.

When chemicals are brought on to campus, usually in the form of paint and cleaners, EH&S reviews the information supplied by the manufacturers. This information is in the form of a Material Safety Data Sheet (MSDS). As with the dust, when the MSDS states that chemicals are particular irritating or toxic, EH&S will recommend application during a time that will least affect our occupants.

When considering the effect of construction on any particular campus population we have realized that there are some people who are more sensitive to nuisance dust and common workplace chemicals. Those who have respiratory disease or other chemical sensitivities might exhibit a more severe reaction to construction by-products than their co-workers.

If you know you will be adversely affected by pending construction, alert your supervisor. Supervisors who have questions about accommodation of sensitive employees can contact Human Resources for guidance with dealing with such issues.

West Nile Virus

Jim Gindlesperger

Our wet spring means we will likely see a bumper crop of mosquitoes this summer, with an accompanying risk of West Nile virus. It is important that you know how to protect yourself.

First, you should know that few who become infected will develop symptoms. Some may show minor flu-like symptoms, but only in rare cases will the infection result in severe illness. Those who are susceptible to severe cases, usually the elderly or those with depressed immune symptoms, can develop West Nile encephalitis, a potentially fatal brain inflammation. Less than 1% of those infected will develop severe illness, however, and fewer still will die. Also, those who are infected are believed to develop a lifelong immunity.

The virus is not spread from human to human, although there is rising suspicion that it could spread through organ transplants. It is not spread by contacting dead birds, either, as many fear. The only reason we gather dead birds is to allow the Board of Health to determine if the virus has spread to Pittsburgh. We have not been asked to collect dead birds yet this year, but, because the virus did reach Pittsburgh last summer, it is likely to return.

To avoid mosquito bites, stay indoors at dawn and dusk when mosquito activity peaks. When outside, wear long sleeved shirts and long pants, and apply an insect repellent containing at least 35% DEET. According to a study reported in the July 4, 2002, edition of the New England Journal of Medicine, "Only products containing DEET are dependable for long-lasting protection after a single application." The study also noted that when label directions are followed, DEET will not pose unreasonable risks or adverse effects to humans, so there is no reason to be afraid to use it. DEET works by disrupting the ability of biting insects to detect the source of carbon dioxide—the gas naturally given off by our skin and in our breath—which is what attracts mosquitoes to us. In other words, it doesn't kill the insects—it just makes it impossible for them to locate their prey.

To reduce exposure, repair broken window screens, keep doors and windows closed, and eliminate any standing water sources. Puddles, tires, or even lamp posts can contain standing water, perfect breeding grounds for mosquitoes. Be watchful for these places and eliminate them.

By following these simple precautions, and by knowing the truth about West Nile Virus, you can protect yourself and eliminate a lot of worry.

Flickering Computer Screen?

Celia Rajkovich



Shaky computer screens are a major cause of eye fatigue, not to mention just plain old annoying. There are several reasons why computer monitors seem to shake or flicker.

1) A hardware conflict; using adapters to connect one brand of hardware to another brand.

2) Electro Magnetic Field Sensitivity—anything powered by electricity, from printers to coffee cup warmers, inside an office or outside, contributes to increased EMF Fields.

3) Resolutions and refresh rates of monitors. Interlaced monitors scan every other line during each total vertical screen refresh. The unrefreshed lines begin to fade and cause flicker. Non-interlaced monitors scan each line during each total vertical screen refresh and result in a better quality, flicker-free image. A high refresh rate can eliminate screen flicker and reduce eye fatigue.

The Video Electronics Standards Association recommends a refresh rate of 75 Hz or more. Make sure your monitor and your graphics controller support 75 Hz at your planned resolution; anything above 75Hz is considered flicker-free. The higher the vertical refresh rates, the better. Check each manufacturer's maximum refresh rates at various resolutions when making a purchasing decision.

What are some other remedies?

1) Ensure your computer video card supports these resolutions; some cards have very specific frequency ranges and will not support lower or higher resolution from what they consider the "normal" or "optimal" range. While the monitor may support the resolution, it is an output device and will run from the resolutions your computer video card will allow.

2) Ensure that you have used the correct resolution and drivers for your video card.

3) Always ensure your work or entertainment station is positioned for maximum ergonomic benefit.

To Reach Us
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Summer Interns

Mark Banister



EH&S has two summer interns this year. Eric Lanni was with us last year and will again be testing fume hoods and working hard on our various databases. He is a junior at Pitt, majoring in Chemistry. Megan Rook-Koepsel is a junior at Brandeis and will be performing lab visits, and confirming locations and conditions of emergency response equipment and obtaining safety contact information. If you see either Eric or Megan, please welcome them to your area and help them in their tasks whenever you can.

Training, July - September, 2003

Jim Gindlesperger

Call Extension 8-8182 to register for any of the following training classes, or to request that a particular class be conducted. **Classes will be held in the 3rd floor conference room of the FMS Building unless otherwise indicated.** Course descriptions can be found on the EH&S website.

Confined Space Entry (Instructor: Jim Gindlesperger)

August 21: 8:30 – 10:00 am

Driving University Vehicles (Instructor: Outside Agency, coordinated by Jim Gindlesperger)

September 26: 8:30 – 11:30 am

Hazard Communication (Instructor: Mark Banister)

Call for training dates and times

Hazardous Waste and Lab Standard (Instructor: Mark Banister)

July 28 and September 29: 1:30 - 4:00 pm

August 28: 9:30 am - noon

Ladder Safety (Instructor: Jim Gindlesperger)

August 14: 8:30 am – 10:00 am

Lockout/Tagout (Instructor: Jim Gindlesperger)

July 24, September 11: 8:30 – 9:30 am

Radiation Safety (Instructor: Megan Marks)

Refer to web site