



UPDATE

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Winter 2009

Asbestos Surveys

OSEH has been conducting asbestos surveys of campus buildings since the 1980's. Asbestos surveys are often initiated during the planning phases of a renovation project to ensure that asbestos containing materials are properly abated prior to the demolition of building components.

In order to promote greater awareness among the University community and allow for quick access to information, OSEH has created a website where asbestos survey information is available.

Summaries of asbestos surveys are available for general public access and more detailed survey information is available to architects, engineers, construction managers and building facilities personnel that require greater detail to design the renovation project.

Survey information is currently available for many campus buildings and the webpage will continue to be updated as additional surveys are completed. This information can be accessed by visiting the following web address: <http://www.oseh.umich.edu/asbestossurveys.html>

Asbestos is a naturally occurring mineral which was commonly used in a variety of building products such as floor tile, pipe insulation, caulks, sealants, trowelled-on plaster, wall-board, fire doors, fume hood linings and lab countertops. As long as asbestos containing materials are kept in good condition, their risk to health is minimal. University staff work diligently to maintain the material in good condition. However if these materials are damaged and release fibers into the air, they can present a health risk.

If you have questions or concerns regarding asbestos containing materials or the survey information, contact OSEH at 647-1142 or you may refer to the Asbestos Management Program Guideline found on the OSEH website: <http://www.oseh.umich.edu/guidacm.pdf>

2009

*Safety Coordinator
Conference*

Mark your calendars!!!
June 17th, 2009

Winter Weather Hazards

On average, a major winter storm hits some part of Michigan at least once per month between October and April. In 2006, the last year that statistics were available, 37 persons died as a direct result of severe winter weather according to local and state health departments. This is in addition to victims of auto accidents due to slippery road conditions and those who suffer heart attacks while shoveling snow.

Being able to recognize weather threats, develop an action plan and be ready when severe weather threatens are all steps you can take to ensure your safety.

Stay Informed

Making an informed decision on your risk and what actions should be taken can be done by listening to the weather reports on radio and

television. Knowing what common winter weather terms mean such as advisory, watch, warning and wind chill and medical terms such as frostbite and hypothermia will further help protect you by understanding the threat level they represent to you.

Be Prepared

Before severe weather occurs, have available a basic emergency preparedness kit for use at home, work and in the car. A kit should consist of many items such as a battery powered NOAA weather radio, first aid kit, and a cellular telephone. Dress appropriately for the weather.

Have a Plan

Stay attentive to weather broadcasts, what type of storm is being predicted and how you should respond. Assess your risks and identify ways to make your home, office and vehicle more secure.

Further information may be obtained through the preparedness guide titled "Winter Storms - The Deceptive Killer " found at:

<http://www.nws.noaa.gov/om/brochures/winterstorm.pdf>



Storm Drain Markers

Many people do not realize that the storm water drainage system generally flows directly to the Huron River without any treatment. This means anything that finds its way into the storm drain will go directly into the Huron River as well. Even seemingly harmless materials become storm water pollutants.

The following materials are some of the most common pollutants:

- Litter and debris
- Food
- Beverages
- Wash water from car washing
- Fertilizers and pesticides
- Grass clippings
- Sediment
- Oil
- Animal waste

To help educate members of the University community about the concerns with polluting materials entering our storm drains, UM has applied “curb markers” to storm drains all over campus. These markers carry the message: “Keep our Michigan Waters Blue: Dump No Waste – Flows to River.” All new storm drains that are placed on campus also come with the message “Dump No Waste – Drains to Waterways” engraved on them. These will help make sure that the message will be more permanent.

OSEH has a video on storm water management and brochures that provide members of the University community with a greater understanding of storm water pollution prevention issues.

For information on viewing the storm water video at group meetings, or for brochures, please contact OSEH-Environmental Protection and Permitting at 936-1920.

Additional information is available on the OSEH website at:

<http://www.oseh.umich.edu/stormwater/stormdrain.html>



Down the Drain

The Sanitary Sewer System: Questions and Answers

What happens when you pour something down a drain inside a building? These discharges flow through the sanitary sewer system prior to reaching the Ann Arbor Waste Water Treatment Plant (WWTP). Once at the treatment plant, waste water is cleaned through a multi-step treatment process prior to being discharged to the Huron River. Do not pour other materials (pollutants) down the drain such as chemicals, metals, solids, and oils, as they can interfere with the treatment process and may cause a release of polluted water into the Huron River.

What can go down the drain inside buildings? Only consumable products, such as pop and coffee, and household products can go down the drain. Be sure to use household products in the manner intended and to follow the directions on the label for disposal procedures.

What do I do with materials that cannot go down the drain or excess/unused products and chemicals? Consult your operating procedures or the Material Safety Data Sheet (MSDS) to identify the chemical constituents in the material. Then call the OSEH Hazardous Materials Management Program at 763-4568 to schedule a pickup of the material, and to request labels and manifests which are used to properly identify the materials for pickup.

Where do drains outside buildings go? These drains are connected to the storm water system, which drains directly to the Huron River without any treatment. **Do not pour anything down the drains outside buildings.**

What do I do if there is an accidental spill into any drain (inside or outside)? Prevent additional material from entering the drain and immediately call the UM-Department of Public Safety at 763-1131 to report the incident. They will dispatch OSEH to clean up the spill.

Who do I contact for more information? Please contact OSEH Environmental Protection and Permitting Program at 763-6973.

Radon

The U.S. Environmental Protection Agency (EPA) wants you to join the national effort and take action against radon.

Radon gas is not detectable through sight, smell or taste, but it can be present in dangerous levels in your home. According to the EPA, radon is the leading cause of lung cancer deaths among nonsmokers. It claims the lives of about 20,000 Americans yearly.

The EPA suggests three things you can do:

- Test your home. EPA and the U.S. Surgeon General recommend that all homes get tested for radon. Testing is easy and inexpensive.
- Spread the word! Let your friends and family know the risks of radon and the importance of testing their homes for it. Plan an activity in your community to raise awareness.
- Buy a radon-resistant home. If you are a new homebuyer, look for builders who use radon-resistant construction.

If you have questions feel free to contact OSEH Radiation Safety Service at 764-6200.

Practice Safe Storage, Use Secondary Containment

Secondary containment structures are intended to provide worker protection and to prevent environmental contamination during handling of materials and accidental leaks, spills, and tank overfills. It is especially important to have secondary containment for storage containers that are located near drains so the contents of the containers are not inadvertently released to the environment.

In most cases, secondary containment is required wherever regulated substances are being handled or stored. These regulated materials include flammable and combustible materials, hazardous substances, hazardous waste, salt, gasoline, diesel fuel, antifreeze, acetone, oil, alcohols, kitchen grease, and water treatment chemicals.

Most regulations do not mandate the form of the containment except to specify its volume. Therefore, a number of options are available when selecting secondary containment for a particular area. Typical forms of containment structures include liquid-tight storage cabinets, berms, curbs, sunken floors, and vaults. Many

of these items can be purchased as ready-made units; the others are constructed on site. The regulations for the required volume of these structures vary with the agency administering the rules and the type and volume of material being stored. As a general rule however, hazardous materials and wastes must be stored within a secondary containment structure that will hold 100% of the single largest container or 10% of the total volume stored, whichever is greater.

Even where it is not required it is always recommended to have secondary containment. First, the cost of supplying secondary containment is usually much less than the cost associated with cleaning up a spill that would have otherwise been prevented. Second, and more importantly, secondary containment is there for worker safety; it helps prevent worker exposure to materials that may pose health risks.

If you have questions about secondary containment, contact OSEH-Environmental Protection and Permitting at 936-1920.

Learn more about secondary containment requirements in Michigan at:

<http://www.deq.state.mi.us/documents/deq-ead-tas-secontgde.pdf>

Meet the New Emergency Preparedness Manager: Andy Burchfield

With the vision of building a “model emergency management program in higher education”, Andy Burchfield joined the OSEH Emergency Preparedness program on January 5, 2009 as the new manager. Drawing on 12 years of consulting experience in the emergency management field, Andy’s primary focus for the new program is to create a clear and consistent emergency operations plan, ensure building specific criteria information is available and accessible, and finally provide a communication plan that includes interoperability and reliability. Accomplishing these goals will build a strong foundation for future emergency preparedness programs that will follow.

Andy holds a BA from Western Michigan University in Public Administration and is a certified State of Michigan Professional Emergency Manager. He also has prior fire fighter experience with the City of Brighton. Andy is a Brighton, MI native with family who have worked/graduated from U of M. He is a confessed “die-hard University of Michigan fan”.



Principles of Green Chemistry

Generation of hazardous materials in both teaching and research laboratories is steadily increasing on our campus and their disposal poses significant cost to the University. OSEH has been actively working with a number of interested researchers and academic staff on campus to introduce pollution prevention (P2) and waste minimization (WM) through Green Chemistry (GC). GC or Sustainable Chemistry is the design of chemical processes that reduce or eliminate the use and generation of hazardous materials leading to less impact on the environment.

Green Chemistry is a highly effective approach to P2 and WM because it applies innovative scientific solutions to real-world environmental situations leading to an eco-friendly system for us to live in. It is important that chemistry students at all levels, whether they intend to pursue careers in chemistry or not, be introduced to green chemistry and recognize its sustainable impact on human health and the environment.

The US EPA is promoting Green Chemistry concepts through Green Chemistry programs. Visit www.epa.gov/greenchemistry to learn more about their commitment.

The 12 Principles of Green Chemistry, originally published by Paul Anastas and John Warner in *Green Chemistry; Theory and Practice* (Oxford University Press: New York, 1998), provides a road map for chemists to implement green chemistry in their laboratories.



Twelve Principles of Green Chemistry (GC):

- 1. Prevent Waste:** Design chemical processes to prevent waste, leaving no waste to treat, clean up or dispose.
- 2. Design Safer Chemicals and Products:** Design chemical products to be fully effective, yet have little or no toxicity.
- 3. Design Less Hazardous Chemical Syntheses:** Design syntheses to use and generate substances with little or no toxicity to human health or environment.
- 4. Use Renewable Feedstocks:** Use raw materials and feedstocks that are renewable rather than depleting. Renewable feedstocks are made from agricultural products and depleting feedstocks are derived from fossil fuels such as natural gas, petroleum etc.
- 5. Use Catalysts: Minimize waste by using catalytic reactions:** Catalysts are used in small amounts and can carry out a single reaction several times.
- 6. Avoid Chemical Derivatives:** Avoid using blocking or protecting groups in the reactions as they use additional reagents and generate waste.
- 7. Maximize Atom Economy:** Design syntheses to obtain a desired product that contains maximum proportion of the starting materials. These should be few, if any, waste atoms. Diels-Alder reaction is a perfect example to fit into this principle.
- 8. Use Safer Solvents and Reaction Conditions:** Avoid using hazardous solvents and reaction conditions. Substitute hazardous solvents with safer ones and recycle them for further use.
- 9. Increase Energy Efficiency:** Run chemical reactions at ambient temperature and pressure whenever possible.
- 10. Design Chemicals and Products to Degrade After Use:** Design chemical products to break down to innocuous materials after use so they do not accumulate in the environment.
- 11. Analyze in Real Time to Prevent Pollution:** Practice a real-time monitoring and control of products to minimize or eliminate the formation of unwanted by-products.
- 12. Minimize the Potential for Accidents:** Design chemicals and their forms (solid, liquid or gas) to minimize the potential for accidents including explosions, fires and release into the environment.

When designing an experiment in a teaching laboratory or synthesis in a research laboratory, try to implement many or all of the above principles in order to have a positive impact on the environment while practicing the sustainable green chemistry.

If you have interest in introducing GC principles in your laboratory, please contact Dr. Sudhakar G. Reddy at OSEH at 763-4568. For further information about UM initiatives on waste minimization or pollution prevention, contact Megan Loll in the OSEH Environmental Sustainability program at 936-5238.

Check out our website at:
<http://www.oseh.umich.edu/es.html>

Contact Information

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Flint Campus:

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