



UPDATE

www.oseh.umich.edu

Fall 2008

DOT/IATA Training

Any employee who is involved in the preparation, packaging or shipment of infectious substances, biological materials, human/animal specimens, genetically modified microorganism or any shipment involving the application or use of dry ice must be trained and certified by the Department of Occupational Safety and Environmental Health (OSEH). Classes are scheduled monthly and will be held at the OSEH office. Employees will be instructed on classification of materials, packaging, labeling and proper documentation to meet Department of Transportation (DOT)/International Air Transport Association (IATA) requirements for safety. This training is required every two years. Please go to the OSEH website to register online for the next available class <http://www.osehtraining.umich.edu/osehtraining>. Upon completion of the shipping training you will receive a certificate. Certificates should be maintained in the laboratory's training files.

Biological Shipping Systems

United Nations certified biological shipping systems are now available to university departments at cost. These systems accommodate a variety of primary containers and include products for shipping with dry ice. Shipping systems are for those laboratories that have limited or occasional shipping of biologics. Those laboratories that ship more frequently may purchase bulk shipping systems directly from suppliers. To order these supplies visit the OSEH website at <http://www.oseh.umich.edu/UNCertifiedBiologicalShippingSystems.pdf>

Contact Janet Follo at 647-3133 if you have questions regarding shipping systems or require assistance with shipping biological materials.

Contact Information

Ann Arbor Campus:
Occupational Safety &
Environmental Health
1239 Kipke Drive
Ann Arbor, MI 48109-1010
(734) 647-1143
www.oseh.umich.edu

Dearborn Campus:
Public Safety &
Environmental Health
1300 CSS
4901 Evergreen Rd.
Dearborn, MI 48128-2406
(313) 593-9953
[www.umd.umich.edu/
public_safety_env_health](http://www.umd.umich.edu/public_safety_env_health)

Flint Campus:
Env., Health & Safety
204 University Pavilion
Flint, MI 48502-1950
(810) 766-6763
www.umflint.edu/ehs

Emergency Planning Expectations

Several times each year, your workplace may expect you to either leave your building or shelter-in-place due to events such as severe weather, or a fire drill. The emergency messages you receive on the event will normally include what action you will need to take to stay safe.

There are several ways you may find out about an emergency event such as the outdoor warning sirens (severe weather and a terrorist event indicating you need to go indoors and take cover), the University's 800 MHz radio system, a mass email, or your building coordinator. Depending on the severity of the event, a press release may also be issued to local radio stations and be placed on the University's main website gateway.

The University is currently using a mass notification product that will notify staff, students and faculty of an emergency event via their email, desk/dorm telephone or cell telephone. To sign up for these notifications go to www.umemergencyalert.umich.edu/.

Knowing your primary and secondary building evacuation routes will help you considerably when an evacuation, or shelter-in-place, event occurs. Find out where they are in relation to your work area or classroom. Each building should have these posted at key locations.

If you are told to evacuate, or shelter-in-place, follow these simple tips:

- Be prepared to follow all instructions by emergency authorities
- Respond to the pre-determined meeting point
- Walk; do not run to the nearest exit
- Do not use elevators
- Assist people with special needs
- Do not re-enter until advised to do so

Become familiar with emergency procedures by visiting the following website: <http://www.umemergencymanagement.umich.edu/epp/flipchart.shtml> or drop us an Email at oseh.contact@umich.edu to request a printed version to post in your area.

Finally, if an emergency occurs away from your immediate workplace, stay away from the area. By going to the incident site you will only add to the problem and could become another victim.

General Emergency Preparedness information:

<http://www.umemergencymanagement.umich.edu>

Up to Date Emergency News:

police.umich.edu

September Is National Emergency Preparedness Month

Disasters and emergencies can occur without warning at any time regardless where you may be. If steps are taken ahead of time you stand a much better chance of coming through a negative event unharmed and recover more quickly.

September has been designated as national preparedness month and individuals across the nation are encouraged to take important preparedness steps. These steps include: getting an emergency supply kit, making a family emergency plan, being informed about the different emergencies that may affect them, as well as taking the necessary steps to get trained and become engaged in community preparedness and response efforts. Two important national websites: www.ready.gov and www.citizencorps.gov can provide resources on how to accomplish these steps.

Here at U of M, the Emergency Response Flipchart has been developed to assist by providing critical response actions to a variety of emergencies. Reading the guide before an emergency occurs, becoming acquainted with the contents, and posting it in your office or lab for immediate reference will help you to be better prepared to protect yourself and your co-workers.

Remember These Steps:

- Remain calm – Don't panic.
- Stay tuned to radio or news sources for updated information.
- Keep emergency supplies in your office or lab (medications, flashlights, comfortable shoes, bottled water, batteries, and portable radios).
- Review and post the Emergency Procedures Flipchart in a visible location in your office/lab.
- Contact your building coordinator to learn your building's evacuation plan and become familiar with the quickest exit routes from your building.
- Know where the rally point is to meet your co-workers and be accounted for during an evacuation.
- Locate the nearest fire extinguisher and pull station and participate in a fire extinguisher training course.
- Report suspicious and / or unauthorized persons to DPS (call 9-1-1 or 763-1131).
- Immediately report to DPS suspicious or unattended packages, containers or vehicles; signs of a break-in or attempted unauthorized entries; or unusual odors or substances.

The Emergency Response Flipchart can be found at the following web link or call OSEH at 615-6764 if you would like a hard copy to post:

<http://www.umemergencymanagement.umich.edu/epp/flipchart.shtml>

Green Chemistry: Benign Solvents

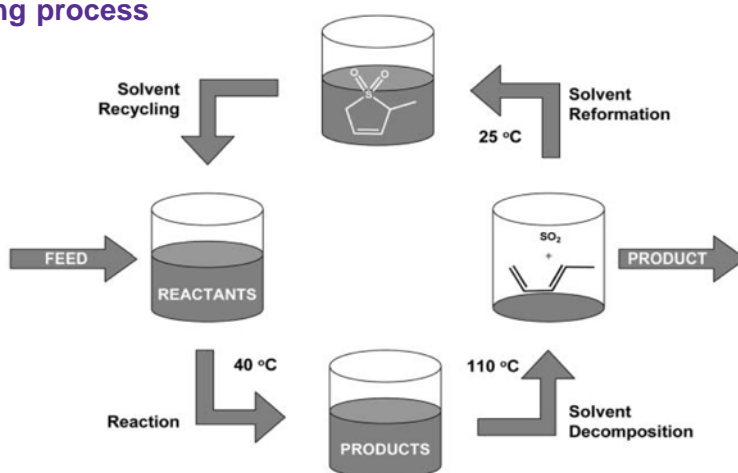
A major cost for University operations, both in terms of dollars and impacts to the environment, is the generation and disposal of hazardous by-products from chemical reactions in both our research and teaching laboratories. OSEH has been working with a number of interested researchers and academic staff on campus to introduce waste minimization programs in laboratories. One key element to this collaboration is the introduction of greener processing at the front end to reduce waste at the back end. Green Chemistry (GC) is the design of chemical processes that reduce or eliminate the use and generation of hazardous materials leading to less impact on the environment. The growing need for greener and more sustainable technologies opened up opportunities to develop new processes in industry, public organizations and educational institutions. The Presidential Green Chemistry Challenge Awards Program, instituted in the mid nineties, generated great interest among researchers and industrialists to contribute in this new area of sustainable chemistry. The ever increasing number of research papers submitted for publication across the globe clearly demonstrated the growing interest as an emerging subject.

Substitution of hazardous solvents by benign solvents, utilization of microwaves in chemical reactions, development of a new generation of

catalytic agents, application of supercritical fluid reaction conditions, and developing ionic liquids as modern solvents are just a few Green Chemistry applications. The following is an example of a benign solvent application in organic chemistry. Piperylene sulfone (PS) is an adduct of 1,3-pentadiene and sulfur dioxide. It is a liquid at room temperature and has been shown to replace DMSO in reducing ketones to alcohols or alcohols to aldehydes under catalytic conditions. Arthus Ragaukas et al. (Ind. Eng. Chem. Res. 47, 627-631 2008) have demonstrated oxidation of substituted aromatic alcohols to the corresponding aldehydes produces excellent yields. A copper salt was used as a catalyst in these reactions and the catalyst was recovered with no significant loss of catalytic activity. The figure shows a scheme to recover the solvent after the reaction is complete. Recovery of solvent and catalyst for reuse and high yields of reaction product truly represent this as a 'green reaction' resulting in no waste or byproducts.

Other examples of benign solvents replacing many hazardous solvents include water, supercritical carbon dioxide, and limonene. Limonene, a biodegradable solvent, is replacing p-xylene in many pathology laboratories. Design and application of ionic liquids in the organic reactions is currently drawing much attention of chemists. For proper disposal of your waste streams contact OSEH at 763-4568. If you have an interest in introducing greener chemistry processes in your laboratories, please contact Dr. Sudhakar Reddy at OSEH at 763-4568 or via e-mail at redv@umich.edu.

Scheme showing piperylene sulfone (PS) recycling process



Thoughts from the Director

By Terry Alexander

September is National Preparedness Month, and you'll notice several articles in this issue are dedicated to that topic. Here at U of M we take emergency planning seriously and ask that all faculty, staff, students, and visitors do the same. You see it every day as you notice the emergency flipcharts posted in key locations. Everyone who visits a home football game may not realize it, but the stadium is teeming with emergency personnel, and some of those inconveniences we now face upon entry to the stadium are there to help add a layer of protection.

Over the next year you will be seeing more initiatives along these lines, and more chances to learn what to do if something should happen. We plan for the worst and hope it is never needed, but in this day and age that seems less likely. In the meantime, welcome back from the summer vacations and let's all have a safe and enjoyable year.