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ENVIRONMENTAL HEALTH AND SAFETY

“Accidental” Hazardous Materials

Have you ever looked around your hazardous materials area and noticed a bottle that seemed out of place? Were you, after investigation, surprised and possibly upset to find that not only was it unfamiliar, but it was in fact unlabeled? Unfortunately, you might just have become the victim of “accidental” hazardous materials.

Earlier this year a concentrated nitric acid spill occurred in a lab on campus. Upon investigation, it was discovered that the hazardous material had been brought in by someone from another lab for use during an experiment. To complicate matters, the acid was improperly contained, incompletely labeled, and the Registered User of the lab was not aware that it was present. While in this particular case, no one was injured, and the spilled acid caused only minor damage, the incident serves to illustrate several prudent practices for the proper management of hazardous materials.

The container used was a polyethylene bottle. Chemically, polyethylene is fairly stable and is the plastic of choice for a wide variety of labware. Unfortunately, long-term exposure to strong oxidizing agents such as concentrated nitric acid is a condition that should be avoided as the polyethylene can become brittle. Over time, exposure to the concentrated nitric acid, possibly accelerated by exposure to sunlight, caused the container to degrade to the point of complete failure.

Hazard communication standards exist to inform workers of the presence of, and hazards associated with, hazardous materials.

Emergency responders also rely on hazard communication information. Without proper labeling, a well organized lab would become a chaotic world of hidden dangers. Everything in a hazardous materials lab must be labeled in some way. Squirt bottles of water, squeeze bottles of soap, water baths, oil baths, experimental mixtures, and stock reagents must be labeled. All hazardous materials must be labeled with not only the name of the chemical contents but also the hazards associated with that chemical. Labeling instructions and resources can be found on the EHS Web site (web.missouri.edu/~muehs/labeling.htm).

While the proper selection of storage containers combined with the use of a comprehensive labeling system could have minimized the severity of this incident, additional steps could have been taken. The use of a secondary containment system would have captured the spill—preventing the damage to MU property. When a spill occurs there are many costs involved. There is the cost of the original material; the cost of the emergency response; the cost of disposal for the spill clean up material; the replacement cost of the material;

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Director's Desk

Departing Researchers

Principal Investigators and Supervisors have primary responsibility for most safety and environmental issues. When these individuals are not available, responsibility falls back on departments. EHS works with the campus community to provide guidance in developing safety programs and environmental compliance procedures.

One area that proves frustrating for everyone all too often is when researchers depart and biological, chemical, and radioactive materials are left behind. Ideally, researchers would make arrangements to dispose of these materials and otherwise clean their laboratory appropriately prior to departure. Unfortunately, this does not always happen. In such cases, EHS expects departments to take responsibility to arrange for appropriate disposal and cleaning activities.

EHS can provide assistance in cleaning out laboratories, but like everyone else, our resources are limited. Cleanups go most smoothly when we are given advance warning; the more lead time the better. When several of these requests come in at the same time—and we have had six in recent weeks—it makes it difficult for us to provide timely service to everyone.

My advice to departments is to develop closeout procedures for departing faculty. Then, when you become aware that a researcher is leaving MU, contact EHS as soon as possible so we can minimize disruption to your department's operations.

Peter Ashbrook

Accidental Haz. Mats. (Cont.)

the repair or replacement cost of damaged equipment; and finally the cost of repairs to restore the damaged MU property to working order. And, in this particular case, the party who would have been responsible for these costs was not even the “owner” of the hazardous material.

Everyone needs to be responsible and conscientious users of hazardous materials in order to provide a safe work place for students, faculty, and staff while at the same time being good stewards of the funds we are provided to operate MU. With everyone's help we can prevent “accidental” hazardous materials incidents.

Russell S. Hanson

Manager of Hazardous Materials
– Support Operations

Radiation Safety Manual Update

The MU Radiation Safety Manual (RSM) contains program policies and procedures that have been developed to meet our regulatory obligations. We are continually updating this manual to reflect regulatory changes and program dynamics. RSM changes are also triggered by users' comments and suggestions. I am pleased to present a new RSM update and hope that we were successful in our attempt to make it more helpful and user friendly.

In the recent past the RSM was available on the Web in HTML format with the Radiation Safety forms in PDF format. It took us more than a year to develop and add the RSM Word version but the final result is worth the efforts. Using the Word RSM our users are able to perform a search, using the “Find” function under “Edit” on your toolbar, and to fill out Radiation Safety forms on their computers. The Word version of the manual brings us closer to our goal of being able to send and receive Radiation Safety forms via e-mail. We are now making final arrangements and will notify radioactive materials users when we will be ready to accept forms via e-mail.

The MU Radiation Safety Office continually works on training course curriculum and content to better tailor our courses to the ever changing needs and expectations of our Authorized Users (AU) and Radiation Workers. The revised Radiation Safety Course Descriptions section now better conforms to these changes.

The RSM update also mirrors changes in the radioactive material ordering process. We have made arrangements with the Purchasing Department to enable all users to pay for radioactive materials with the University credit card. This modification concerned only the method of payment, while the radioactive material control system remains as stringent and reliable as ever.

The ALARA Reporting section reflects a complete makeover of the MU ALARA/Dosimetry Program. The Dosimetry program at MU currently monitors over 1,100 individuals, and over 11,000 badges are issued and processed annually. To be able to effectively manage this information we have recently purchased and installed RADPRO Dosimetry Management System and supplemented it with the customized reporting and quality control systems. In 2002 many radioactive material users experienced changes in their badge monitoring frequencies: bi-monthly badges were replaced by quarterly badges. This new monitoring frequency will better meet MU ALARA Program requirements as well as established national standards. This year many AUs also noticed that even our badge billing system became more accurate and friendly.

Besides program policies and procedures, the RSM provides users with helpful tools for laboratory operation. I hope that MU users will find our new Isotope Decay Calculator to be a helpful tool in their labs' inventories maintenance and waste management. I do not want to spoil a surprise, but I want to mention that we have some more helpful tools in the pipeline.

As you can see, many changes in the Radiation Safety Manual and Radiation Safety Program were initiated in response to MU community comments and suggestions. Please keep your comments coming in!

Lidia Litinski
Radiation Safety Officer

MU Indoor Air Quality

Indoor Air Quality (IAQ) concerns in office environments have been a vocal issue since the mid-1970's. All of us are familiar with the term Sick Building Syndrome (SBS) which is a set of complaints or symptoms frequently reported by occupants of certain buildings. The Tight Building Syndrome (TBS) term is commonly related to problems associated with buildings designed and operated at minimum outdoor air supply or poor air distribution. Recently, several public broadcasts have raised awareness on potential health and allergy concerns with mold growth in moist or wet indoor environments.

Guidelines for achieving good indoor air quality include:

- ? Ventilation meeting the American Society of Heating, Refrigerating, and Air-conditioning Engineers (ASHRAE) standards.
- ? Comfort (temperature, humidity, and air movement) factors are acceptable to occupants.
- ? Mechanical equipment and building surfaces are maintained in sanitary condition.
- ? Significant emission sources are isolated from occupied space.
- ? Major sources of contamination are promptly controlled.
- ? Operations, maintenance, and construction activities are performed in a manner that minimized occupant exposure to airborne contaminants.

The Building Coordinator is the focal point to coordinate the necessary resources and address the IAQ problem. If a health hazard is suspected, the building coordinator or Campus Facilities will contact the Industrial Hygiene office at EHS as a resource to provide IAQ support. A brief process flow chart is shown below for reference:

1. Report IAQ complaint or issue to your respective supervisor or manager.
2. Suspect Area Supervisor(s) and Area Occupant(s) complete the appropriate

- questionnaires.
3. Contact Building Coordinator of the suspect IAQ area to focus and coordinate resources.
 4. Contact Campus Facilities Maintenance to investigate and address building air handler system reviews.
 5. Contact EHS for an **IMMEDIATE** Health Hazard situation

Many IAQ complaints are not the result of health hazards but are nuisance issues due to poor circulation, make-up air, humidity, and temperature control. Campus Facilities

Maintenance maintains and coordinates the building's air handler systems that supply a comfortable indoor environment.

If there is an immediate health hazard concern, EHS should be contacted as soon as practically possible for a hazard evaluation. For additional IAQ information, please visit the EHS web site.

Roger Riddlemoser

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**Outstanding EHS
Staff Member
Karen Ballew**

Outstanding EHS Staff

Congratulations go out to Karen Ballew on being the 2002 Chancellor's Outstanding Staff Award recipient in the Technical/Paraprofessional category. Karen is a Senior Environmental Health Technician who leads the EHS Hazardous Materials monitoring team. Recently, Karen also became a trainer of Hazardous Materials Management classes. Would it be hard to

nominate someone that co-workers describe as: personable, accommodating, always trying to help people, intelligent, social, positive, knowledgeable, happy, caring, dedicated, conscientious, and humble? As you can see, nominating Karen was not hard work at all. Karen truly deserves this award, and it appears many people agree because congratulatory letters have been pouring in.

Congratulations Karen! We are proud to have you on our staff.

Natalia Joy

Environmental Health Technician
- HMM Support Operations

EHS appreciates campus support of environmental and safety issues. If you have any special needs regarding the format of this publication, or have any comments regarding newsletters, training programs or services, please direct your communications to Rebecca Bergfield, Editor at the above address.

