



Notes

ENVIRONMENTAL HEALTH and SAFETY

Sharps

The term "sharps" is a regulatory classification associated with instruments used to puncture, cut, or scrape body parts and that, as waste, can cause punctures or cuts to laboratory workers, waste handlers, or the public. "Sharps" include, but are not limited to the following:

- Hypodermic needles
- Syringes still connected to the needle
- Sharp or broken glass contaminated with biohazardous materials
- IV tubing with needles attached
- Suture needles
- Lancets
- Scalpel blades
- Glass pasteur pipettes
- Microtome blades
- Dental scalers
- Razor blades
- Sharp metal laboratory waste

All sharps must be placed into properly constructed sharps containers. Sharps containers are closable, puncture resistant, leak proof on the sides and bottom, and must be sealed prior to transportation. Sharps containers also holding biohazardous material must have an International Biohazard Symbol. Syringe cartridges and needles should be disposed of intact to prevent needlestick injuries associated with resheathing. Please

note the following related issues:

Syringes and needles used by diabetics cannot be disposed in the regular trash and must be disposed of as sharps. If you do not have access to a sharps container, contact EHS for assistance.

Uncontaminated broken glass may be placed in a closable, puncture resistant container (such as a cardboard box), labeled as "Broken Glass," and then disposed in the regular trash.

Sharps contaminated with radioactive materials or hazardous materials require special handling. Contact EHS for guidance.

Roy Parsons
Biosafety Professional

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Director's Desk

Guidance on Unwanted Materials

We have taken a different approach with this newsletter. Rather than a mix of articles about current EHS issues, we have prepared comprehensive guidance on disposal of unwanted materials. While it would be simplest to merely throw everything into a single container that is collected for disposal periodically, there are safety, environmental, economic, and regulatory reasons why this should not be done.

Most people usually don't think about the safety issues associated with disposal of unwanted materials. For those collecting these materials, the occurrence of heavy containers presents lifting hazards. For this reason we advise that containers not be overfilled. Another significant source of worker injuries occurs from the disposal of sharps. Provisions have been made for special sharps containers in laboratories. However, in areas where sharps are not routinely produced, proper disposal containers may not be readily available. The third safety issue is free powders or materials with chemical odors that raise uncertainty in workers' minds about the hazards of the materials. Please contain and label any materials that may raise uncertainties in the minds of workers.

From the environmental point of view, a prime objective has been to keep liquids out of landfills to minimize the potential for leaching hazardous materials into **ground water. Another objective has been to recycle or reclaim useful**

ground water. Another objective has been to recycle or reclaim useful items since not all unwanted items are truly wastes (See article titled, "Is It Waste or Just Unwanted?"). Regulatory concerns also have a significant impact. Specific regulations address handling and disposal of radioactive materials, hazardous materials, certain biological materials, asbestos, lead paint in construction debris, computer monitors, batteries, and fluorescent lamps.

We recognize it is difficult for the campus community to keep on top of the various disposal procedures. We hope this newsletter will clear up many of the misunderstandings. Should you have any questions or suggestions, feel free to contact EHS.

Peter Ashbrook

Unwanted Radioactive Materials Pickup

During recent pickups of unwanted radioactive material, several common problems have been found in laboratories. Please be aware that these problems, if found in your location, may prevent or delay the pickup of your unwanted radioactive materials.

- **Forms or labels not filled out completely before the pickup.** The Pickup Request Form and all unwanted hazardous material labels must match and contain all of the information requested, including all chemical components, or we may not be able to remove the unwanted material from your laboratory.

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Biohazardous Wastes

Biohazardous wastes are biological materials that have not been rendered innocuous or determined to be non-infectious by the Principal Investigator or her/his authorized representative. These include:

- Blood and blood products
- Sharps (see separate article)
- Cultures and stocks of microbiologicals
- Pathological wastes—tissues, organs, etc.

Packaging and labels are provided by either EHS or the campus biohazardous waste vendor, which is currently Engineered Recovery Systems (ERS). Several campus buildings have biohazardous waste accumulation areas which are serviced by ERS. Each biohazardous waste container must also have a properly completed yellow, unwanted hazardous materials label (available from EHS). EHS will pick up properly packaged and labeled biohazardous waste containers upon submission of a Pick Up Request Form (PURF).

All materials that could become putrid must be refrigerated until collected by EHS or the authorized campus biohazardous waste vendor.

Remember to segregate biohazardous wastes from radioactive waste and unwanted hazardous materials whenever possible. Should your wastes have multiple hazards, please contact EHS for segregation, packaging, and labeling advice.

Roy Parsons
Biosafety Professional

Is it Waste or Just Unwanted?

Persons disposing of hazardous materials know that EHS has worked very hard to train the campus community to refer to these items as “unwanted hazardous materials” rather than “hazardous waste.” The reason for this seemingly trivial distinction is that there are stringent government regulations that apply to materials if they are designated as “hazardous wastes.” Rather than train the campus community in the complex regulations of what is classified as a regulated hazardous waste, EHS has directed the campus community to refer to these items by the more accurate term of “unwanted hazardous materials.”

Each container of unwanted hazardous materials has a special yellow label that provides information about the material contained therein. This approach provides adequate warning to others that potentially special hazards are present. EHS then collects unwanted hazardous materials and transports them to the Resource Recovery Center. There, staff divide them into those that have some value (usually through recycling), and those that are actually regulated hazardous waste. So, please, refer to these items as “unwanted hazardous materials.”

More generally, EHS feels it prudent to refer to all items you wish to dispose of as “unwanted materials” rather than “waste.” This mindset opens a range of possibilities for recycling. There are usually environmental and economic benefits to recycling unwanted materials, and it is too easy to forget about these if we refer to our unwanted materials as “waste.”

Peter Ashbrook
Director EHS

Unwanted Hazardous Materials: A Primer

In keeping with the theme of this semester's EHS newsletter, I've tried to summarize much of the guidance available on the EHS website, often combining information from the Hazardous Materials Management manual with newer guidance on alternate handling procedures for Universal Waste (computer monitors, batteries, and fluorescent lamps). Keep in mind a short article could never cover all the details, so omission of a procedure from this article does not mean it is not required. If in doubt – refer to complete instructions on the EHS website or contact us at 882-3736 for clarification.

Before You Begin

Choose a good quality container with a secure closure that is compatible with the material you will be collecting. Milk jugs and soft drink bottles are not suitable containers. Corrosive materials must be collected in plastic or glass containers. There are two primary Hazardous Materials Labels (HML) available. Make sure you choose the right one: "EHS HML" for non-radioactive chemical materials and "EHS HML-R" for radioactive materials. **Complete the "Start Date," "Name of Material" and "Components" sections immediately** after you first begin placing material in the container. This does not mean the other fields can be left blank – but absolute accuracy in these three areas is needed for regulatory compliance.

During Collection

Also necessary for compliance is only opening containers of unwanted materials to add material to them. The container should then be immediately closed. This means **funnels can never be left in place**. If collecting

material in a safety can – the lid cannot be left open – even if the can has a device which would allow this. **Containers should never be overfilled** since the chemicals you put in a container will probably be emptied by a member of EHS. Instead fill the container no higher than the shoulder or leave one inch or more headspace to increase safety for EHS staff. Be sure to **maintain the component information on the HML** if you add different but compatible materials to your collection container. If you find you need additional room, a continuation label [HML-C (04/03)] is available. This label must never be used alone.

Removal of Containers

If six months have passed since the start date on the HML, you must request collection of the container whether or not it is full. Limit accumulations to less than 25 gallons. When you're ready (or need) to have EHS collect your unwanted materials, complete a Pick Up Request Form (PURF). All of your used unwanted chemical materials can be listed on one PURF. A separate PURF should be used when requesting collection of unused materials you no longer need. In both cases, after you've checked the appropriate box at the top, you must list as much information as possible on the PURF. **Feel free to use several lines to describe the container's contents.** At a minimum, all information listed on the HML must be copied over to the PURF. EHS needs this information before collecting your container to facilitate tracking and safe handling. If information on the PURF and container does not match, EHS may ask the user to resubmit the request. **If you have more than 20 containers to be collected, we suggest you contact EHS before beginning any paperwork.**

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A Primer (Cont.)

Every effort must be made to identify unknown materials. In the event you cannot classify the contents – a separate PURF must be completed for that item and the “Unknown Materials” box must be checked. Keep in mind that any costs associated with identifying the material will be charged back to the Registered User.

Your PURF may be faxed to 882-5270 or mailed to “RRC, 1710 East Campus Loop.” EHS attempts to collect all materials within two weeks of receiving a properly completed PURF. You will help yourself if you request collection of your unwanted hazardous materials before the space you have designated for their storage becomes crowded or overfilled. EHS regrets that we cannot collect containers not included on the PURF. If you find you have additional materials you wish collected, you must submit a separate PURF for those items.

Note: radioactive materials must not be listed on the PURF as described here. A special form for those materials should be used. Instructions for radioactive material collection can be found in the Radiation Safety Manual.

Fluorescent Lamps and Batteries

To encourage recycling, alternate “Universal Waste” rules have been created for managing certain hazardous materials. At MU, these rules apply to unbroken fluorescent lamps and batteries (except alkaline, which need not be collected). If you manage these materials, you can use the Universal Waste label in place of the HML. The containers still need to be closed except when adding materials (so the cardboard flaps on a lamp box must not be left open). When full, the containers can be listed on a PURF or delivered to the RRC when EHS staff is available to receive them. Never leave

materials on our doorstep or attempt to deliver any other items. Computer monitors are processed through Surplus Properties where they will be put on sale. Unsold monitors will be disposed of as Universal Waste.

Todd Houts
Assistant Director, EHS

Radioactive Materials (Cont.)

- **Containers contaminated on the outside.** If contamination is found, the container will not be removed until it has been decontaminated by laboratory personnel.
- **No radiation worker present at the time of pickup.** A trained radiation worker must be present to certify the contents before the unwanted material can be removed.
- **Laboratory unlocked, unattended, and radioactive material unsecured.** MU’s policy requires that all radioactive materials be secured from unauthorized removal or access.
- **Improper packing of materials.** Liquids, dry solids, stocks, lead shields, and sharps must be kept separate.

Please help us eliminate these problems by preventing them in your laboratory. They are time consuming and sometimes unsafe. If you have any questions, please contact your Assigned Health Physicist.

Lee Juengerman
Senior Environmental Health Technician



ENVIRONMENTAL HEALTH AND SAFETY

8 Research Park Development Building
University of Missouri-Columbia
Columbia, MO 65211

(573) 882-7018

<http://web.missouri.edu/~muehs>

What Goes In Our Streams

This newsletter has focused on waste management issues centered around University business in our laboratories, offices, or other work spaces. However, waste management should also be on everyone's mind when they are outdoors on campus. Why? To prevent contamination of storm water and our streams.

Runoff from campus precipitation flows to storm drains, which direct this water into either Hinkson Creek or the Flat Branch. Hinkson Creek has been designated by the EPA as an impaired stream. Many people do not realize that the outdoor drains in streets and elsewhere direct runoff straight into creeks without any treatment whatsoever. Therefore, any pollutants in runoff are going directly into our streams. Though the exact causes of impairment of Hinkson Creek are not known, it

is prudent to take all reasonable steps to keep sediment, litter, petroleum products, and other contaminants from reaching storm drains.

All campus construction projects are required to have land disposal permits issued by the Missouri Department of Natural Resources. To obtain these land disposal permits, the University must prepare a storm water pollution prevention plan for each project. University Project Managers regularly inspect construction sites to make sure that the plans are being followed.

Individuals also have a role in protecting storm water. Not only should you not litter, you should help pick up litter when you see it. Don't put anything (e.g. litter, used oil, leaves) down a street drain because these will all end up in the stream or, even worse, they could clog up the drain causing localized flooding. Should you observe what appears to be improper use of a storm sewer, contact EHS for follow up.

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.

Peter Ashbrook
Director EHS