

HAZARDOUS WASTE MANUAL

ALABAMA A & M UNIVERSITY
Environmental Health and Safety

CHAPTER 1

INTRODUCTION

Alabama A & M University is committed to managing all hazardous materials used and stored at its facilities in a safe and environmentally responsible manner. Alabama A & M University is also committed to maintaining a safe work environment for its faculty, staff, students, and visitors. This manual contains the proper, safe and environmentally responsible procedures for managing and disposing of wastes, thus reducing or eliminating the potential for accidents and release of hazardous materials.

With the enactment on November 19, 1980, of the Resource Conservation and Recovery Act (RCRA), the handling, storage and disposal of hazardous wastes became strictly regulated under federal, state and local laws. Failure to comply with these regulations could lead to closure of facilities, as well as civil and possibly criminal penalties against the University and the persons generating the wastes.

The University has assigned the management of hazardous, biological, radiation and mixed wastes to the Office of Environmental Health and Safety (EH&S). The EH&S has personnel who have the technical training and experience to handle the wide variety of wastes produced by the University.

All persons in supervisory or management positions are responsible for proper handling and management of waste in their areas and for ensuring that University guidelines for hazardous wastes are followed. Supervisory and management personnel are responsible for ensuring that all persons in their respective areas that handle hazardous waste (1) have been through the training class offered by the EH&S and (2) have been trained and understand the waste handling procedures in their individual lab or work area.

Ultimately it is the individual using these materials who is responsible for following the guidelines contained in this manual. With your cooperation, knowledge, professionalism and responsible actions, Alabama A & M University can continue to safely and responsibly manage its hazardous waste.

CHAPTER 2

HAZARDOUS WASTE DETERMINATION

The initial step in safely managing hazardous waste or potentially hazardous waste is determining if you really need to use the hazardous constituents or whether something that is less hazardous or non-hazardous could be substituted. If you must use a hazardous material, and it in turn becomes a waste material you must determine if it is a "Hazardous Waste". Federal and state regulations contain lists of specific chemicals and chemical characteristics that determine whether a waste is regulated as hazardous or not. This chapter identifies those chemicals which are classified as hazardous and require disposal by Environmental Health & Safety (EH&S). For the purposes of this program, chemicals that should be considered "waste" are those which are spent or can no longer be used. Contaminated chemicals, chemicals in deteriorating containers and any other chemicals which are no longer "used and useful" should be considered waste. Chemicals which can be beneficially reused are not considered waste and should be collected by the EH&S for redistribution (see Chapter 5).

Listed Hazardous Wastes

Federal and state regulations reference several categories of substances which have toxic, carcinogenic, mutagenic, or teratogenic effects in humans or adverse impact on the environment. Currently there are over 700 listed hazardous wastes. This list can be obtained from EH&S. Many other chemicals do not appear on these lists but are still considered hazardous (e.g. ethidium bromide and malathion). In general any chemical suspected of having toxic or hazardous properties should be handled by EH&S. You should refer to Material Safety Data Sheets (MSDS) or other competent reference books such as the Merck Index to make determinations about toxicity. For guidance about whether a waste is hazardous or not, contact the EH&S staff.

Characteristic Hazardous Wastes

Certain wastes which are not specifically listed by name are regulated as hazardous because they exhibit one or more of the following characteristics: ignitability, reactivity, corrosivity, or toxicity. If wastes exhibit any of these characteristics they must be handled as hazardous wastes and disposed of by EH&S. Material Safety Data Sheets, the manufacturer's container labels, and reference books can be used to identify whether one or more of these characteristics are present.

Ignitable: A waste exhibits the ignitable characteristic if it is a liquid with a flash point of less than 140 degrees Fahrenheit (60 degrees Celsius). This includes

most non-halogenated solvents such as methanol, acetonitrile, ethanol, gasoline, and ethyl ether. The University also treats as hazardous waste **chemicals which are flammable solids, such as magnesium dust, solid naphthalene and nitrocellulose.**

Corrosive: A waste exhibits the corrosive characteristic if it is a liquid with a pH of less than 5.5 or more than 10.5 and must be treated as hazardous waste. It cannot be disposed of in the sanitary sewer without first being neutralized (provided it has no other dangerous properties such as toxicity). **Examples include hydrochloric acid, photographic chemicals, sodium hydroxide, and corrosive cleaning agents.** Dilution of acids or bases with water is not an acceptable practice. It is recommended that acids and bases be neutralized as part of the experimental procedure to reduce the amount of hazardous waste generated.

Reactive: A waste exhibits the reactive characteristic if it is unstable, explosive, water or air reactive, a strong oxidizer, an organic peroxide, or contains cyanide or sulfide bearing materials that release toxic gases in contact with acids. **Examples include picric acid, potassium metal, metallic picrates, trinitrotoluene, and old ethers.**

Toxic: A waste exhibits the toxicity characteristic if an extract from the waste contains any of the contaminants in Table 1 at a concentration greater than or equal to the value in that table. The extraction procedure is an EPA-specified test method and costs over \$300 to run. In the absence of concentration data, waste containing any of these constituents should be considered hazardous.

Many chemical wastes produced at the University are not on this list but are still considered hazardous for our program purposes and can not be disposed of in the sink or regular trash. A more detailed discussion of these materials is found elsewhere in this chapter and Chapter 4.

Table 1**Maximum Concentration of Constituents for Toxicity Characteristic**

Contaminant	Concentration (mg/L)
Arsenic	5.0
Barium	100.0
Benzene	0.5
Cadmium	1.0
Carbon tetrachloride	0.05
Chlordane	0.03
Chlorobenzene	100.0
Chloroform	6.0
Chromium	5.0
o-Cresol	200.0
m-Cresol	200.0
p-Cresol	200.0
Cresol	200.0
2,4-D	10.0
1,4-Dichlorobenzene	7.5
1,2-Dichloroethane	0.5
1,1-Dichloroethylene	0.7
2,4-Dinitrotoluene	0.13
Endrin	0.02
Heptachlor	0.008
Hexachlorobenzene	0.13
Hexachlorobutadiene	0.5
Hexachloroethane	3.0
Lead	5.0
Lindane	0.4
Mercury	0.2
Methoxychlor	10.0
Methyl ethyl ketone	200.0
Nitrobenzene	2.0
Pentachlorophenol	100.0
Pyridine	5.0
Selenium	1.0
Silver	5.0
Tetrachloroethylene	0.7
Toxaphene	0.5
Trichloroethylene	0.5
2,4,6-Trichlorophenol	200.0
2,4,5-Trichlorophenol	2.0
2,4,5-TP (Silvex)	0.2
Vinyl chloride	0.2

Non-Hazardous Wastes

As a rule persons who generate chemical wastes should not pour them down the sink or put them in the regular trash unless they are certain that the wastes are non-hazardous to humans or the environment. University personnel should consult Material Safety Data Sheets, the manufacturer's container labels, reference manuals, or call the EH&S for guidance on how to dispose of these materials. In general, only non-hazardous solids should be disposed of in the regular trash. Non-hazardous free liquids that are water soluble may be disposed of down the sink. Free liquids that are not water soluble should be referred to the EH&S for disposal. Materials that have strong or unpleasant odors should be referred to the EH&S for disposal. Chemicals in damaged containers should be placed into appropriate secure containers. If not safe to do so, they should be referred to EH&S for disposal.

Unknown Wastes/Chemicals

All waste materials picked up by EH&S must be completely and accurately identified. Materials that are not identified are referred to as "unknowns." EPA permit regulations prohibit EH&S from picking up, transporting, or storing unknown waste materials. When an unknown is discovered, an attempt must be made to identify its contents immediately. Usually the contents can be identified by consulting persons who work in the area where the material was used. If this fails to positively identify the material then some elementary analysis on the material must be performed. Elements of this analysis may include:

- pH on liquids
- Flash point
- Reactivity with water (on a very small scale)
- Specific gravity
- Flammability (on a very small scale)
- Water solubility

If the persons with the unknown cannot or choose not to perform analysis of the unknown, then the University's hazardous waste contractor will perform the analysis for a substantial fee. Maintenance of labels, periodic inspections of chemical stocks, and good chemical hygiene practices will prevent the occurrence of unknowns. The University's **Chemical Hygiene Plan** also has specific requirements for labeling chemical containers. Persons should consult the Chemical Hygiene Plan or call the Environmental Health and Safety for specific information on these labels.

CHAPTER 3

HAZARDOUS WASTE HANDLING AND DISPOSAL REQUIREMENTS

Alabama A & M University is inspected annually by state and federal agencies for compliance with hazardous waste regulations. Failure to meet all of these regulations can lead to a Notice of Violation (and fines) from these agencies. **The most commonly cited violations at universities involve failure to properly label hazardous waste containers, failure to properly identify the contents of the waste containers, and failure to maintain closed containers in laboratories and work areas.**

Labeling

All hazardous waste containers must have a label that states "HAZARDOUS WASTE" and must list the constituents of the waste. This labeling must be done at the time waste is first placed into the container. When naming the waste be specific (e.g., xylene instead of non-halogenated solvents and ethanol instead of alcohol). Do not use abbreviations or chemical formulas. Hazardous waste labels are available from EH&S, or you can use laboratory tape, etc. as long as it states "HAZARDOUS WASTE" and has the specific names of the waste constituents.

Proper Containers and Storage

Proper containers for accumulating and storing hazardous waste must be provided by the person who generates the waste. Generally, the best containers for hazardous waste are the ones that the materials came in. Other containers, such as 30 gal plastic drums, 5 gallon jugs, 4liter bottles, are acceptable as long as the container and any residue left inside are compatible with the waste. All containers must have tight-fitting lids. Corks, ground-glass stoppers or parafilm are not proper substitutes for a tight-fitting lid. Unacceptable containers or containers without tight-fitting lids will not be picked up by EH&S and it will be the responsibility of the generator to transfer the material to another container or to provide a proper lid for the container. EH&S can provide guidance in selecting proper containers.

When not actually pouring waste into or out of the container the top must be securely fastened. You must not leave a funnel sitting in the container. The only exception to this rule is for processes, such as HPLC, which run and add waste to the container continuously. However, when the process is not running the top must be on the container.

By state and federal regulations, at no time can more than 50 gallons of waste be allowed to accumulate in any lab or storage area prior to pick up by EH&S. When the generator has a full container, a waste ticket should be filled out and sent in. The waste will be removed by EH&S as soon as possible. Waste must not be stored over drains, in sinks, or in an area where a spill would contaminate any soils or outside areas. Waste must be stored in a secure place where it is always under the control of the generator. Waste stored outside of labs must be kept under lock and key at all times and inspected regularly. Waste should be stored in designated accumulation areas.

Incompatible materials, whether wastes or unused chemicals, should never be mixed. Incompatible materials when mixed together may cause explosions, fires or may generate flammable or toxic gases resulting in serious health hazards. If in doubt do not mix!

Caution must be exercised in any area where chemicals or wastes are stored to insure incompatible materials are segregated appropriately. Segregate by hazard class, not by alphabet. If possible do not store waste with "good" chemicals (products). Flammable waste should be kept away from heating sources and should be stored in accordance with the University's safety manual. The University Fire Marshal's office or EH&S can provide information on proper storage of flammable and combustible materials. The pairs below are examples of incompatible materials:

oxidizers	and	flammables
elemental metals	and	hydrides
acids	and	cyanides
acids	and	sulfides
acids	and	bases
acids	and	flammables
acids	and	chlorine compounds
acids	and	alcohols
acids	and	elemental metals
amines	and	chlorine compounds
water or air reactives	and	anything
organic peroxides	and	anything
phenol	and	formaldehyde
sodium azide	and	aqueous lead

This list is not all inclusive. For a more detailed list, see "Incompatible Chemicals" in the Chemical Hygiene Plan. You should always consult a Material Safety Data Sheet (MSDS) or other chemical information sources such as Bretherick's Handbook or the Merck Index for compatibility information.

Halogenated waste materials (those containing halogen compounds such as chlorine or fluorine) should be separated from non-halogenated compounds, unless unavoidable. This is for both economic and safety reasons. The halogenated wastes, while much less flammable, are generally more toxic than non-halogenated waste materials. The disposal cost of non-halogenated solvents is approximately one third that of halogenated solvents.

Where possible, mercury compounds should be eliminated from the laboratory. It is very important not to mix mercury with other materials due to the difficulty (and cost) of disposing of mercury and mercury compounds.

EH&S will not pick up containers with dangerous or incompatible materials. These situations will be handled on a case by case basis by the director of EH&S and the principle investigator.

Waste Tickets

To dispose of any hazardous waste you must completely fill out a hazardous waste ticket (see Figure 1) for each container, and a "Chemical Waste Disposal List" Tickets and Lists must be filled out by the person who generates the waste, not a staff assistant or student employee who does not have knowledge of chemicals or has not been through the hazardous waste class. Tickets should be filled out as completely as possible.

- Do not use chemical formulas or abbreviations.
- Use chemical names for waste constituents.
- All liquids should have a pH test performed and recorded on the waste ticket.
- Information should be printed or typed and must be legible.

One ticket should be filled out for each container. If you have a box of vials or small containers that are all of the same chemicals, then only one ticket is needed for the box. For different chemicals, one ticket will be needed for each container. For animal carcasses, one ticket is needed for each bag or box with the total weight listed for the container.

Email or bring the copy of the "Chemical Waste Disposal List" to the EH&S Office. Once the List is received it will be entered into the computer tracking system and personnel will come to your area and pick up the waste. **No waste materials will be picked up without a properly filled out hazardous waste ticket and "Chemical Waste Disposal List"**. The University is required by law to track its hazardous waste from the point it becomes a waste to its point of ultimate destruction. These tickets are our means of fulfilling this requirement.

Figure 1

Hazardous Waste Ticket

HAZARDOUS WASTE

**FEDERAL LAWS PROHIBIT IMPROPER DISPOSAL
IF FOUND, CONTACT THE NEAREST POLICE OR
PUBLIC SAFETY AUTHORITY OR THE
U.S. ENVIRONMENTAL PROTECTION AGENCY**

GENERATOR INFORMATION:

NAME _____

ADDRESS _____

CITY _____ STATE _____ ZIP _____

EPA ID NO. _____ EPA WASTE NO. _____

ACCUMULATION START DATE _____ MANIFEST DOCUMENT NO. _____

[_____]
[_____]
[_____]

D.O.T. PROPER SHIPPING NAME AND UN OR NA NO. WITH PREFIX

HANDLE WITH CARE!

Pharmaceuticals and Controlled Medications

Pharmaceuticals, chemotherapy agents and other controlled medications should be managed in the same manner as any other hazardous waste. When filling out the hazardous waste disposal ticket be sure to list both the common trade name and the more definitive chemical name. Any additional information available about the substance should be stapled to the waste disposal ticket.

Ethers and Peroxide-forming Materials

Some chemicals such as old ethers (not petroleum ether), picric acid, and organic peroxides tend to form unstable (explosive) compounds. Over time they can become ***extremely unstable***. These materials should be restricted to that which is necessary to perform ongoing research. If peroxide formation is suspected, the containers should be isolated and EH&S immediately notified. ***Under no circumstances should researchers attempt to open containers if crystal formations are visible in the container or around the cap.*** Most of these substances have expiration labels attached to the container. It is recommended that researchers mark their containers with the date that the container was received and opened. Peroxide-forming materials that will not be used up or are not needed should be disposed of six months prior to the expiration date on the containers.

Animal Carcasses

Animals that have been contaminated with carcinogens or other highly toxic materials are considered to be hazardous waste and must be disposed of by EH&S. Technically, animals are hazardous waste if they meet the toxic characteristic (see Table 1) or are contaminated with a listed hazardous waste. If you have any questions about the chemicals you are using, contact the EH&S office. Non-contaminated animal carcasses will be handled per instructions

CHAPTER 4

OTHER WASTE REQUIREMENTS

Biohazardous Waste

Biohazardous wastes are human, animal or plant tissue or fluids that are contaminated with pathogenic organisms.

All biohazardous wastes must be clearly marked with the universal biohazard label (see below). If biohazardous waste also contains hazardous or radioactive material, it must be identified as containing both materials; this type of waste should not be generated if at all possible. Materials that contain viable organisms and require incineration should be placed in leak-proof sealed biohazard **Red Bags**. Materials that are to be sterilized and rendered non-pathogenic are to be placed in orange biohazard waste bags. All **Sharps** materials (needles, syringes, scalpels, etc.) must be placed in marked biohazard sharps buckets. Biohazardous waste is picked up by EH&S upon completion of a request form. For specific guidelines on handling and disposing of biohazardous waste, please refer to the University's **Biohazard Safety Handbook**.



UNIVERSAL BIOHAZARD SYMBOL

Mixed (Chemical and Radioactive) Wastes

Mixed waste is both a hazardous waste as defined by the Environmental Protection Agency (see Chapter 2) and a radioactive waste as defined by the Al(Radiation Control) Alabama Department of Public Health. The most common type of mixed waste is scintillation vials that contain flammable (toluene-based) scintillation cocktail and a small amount of radioactive isotope. The creation of

mixed waste that contains toxic or corrosive materials, transuranic elements, or high levels of radioactivity is strongly discouraged. Generators of mixed waste must follow the guidelines established for radioactive waste and hazardous waste. For pickup of mixed waste, fill out a radioactive waste disposal form (provided by the Radiation Safety office). Email copy to the Radiation Safety office where it will be reviewed by the RSO and forwarded to the EH&S for pickup. If it is a scintillation vial container, the generator of the mixed waste must also have a completed "waste scintillation " form filled out and attached to the drum or vial container. For other types of mixed waste, the completed radioactive disposal ticket will suffice. EH&S /RSO will not provide containers for scintillation vials. Please call the Radiation Safety officer with questions or for a copy of the mixed waste guidelines. Please call the EH&S with questions about having waste picked up.

Radioactive Wastes

The disposal of radioactive wastes, other than those classified above as mixed radioactive, will be handled exclusively by the Radiation Safety officer. Any questions should be directed to the Radiation Safety office.

Asbestos and PCB Materials

Research projects creating wastes with either of these materials will be managed by the EH&S. Disposal of asbestos waste generated during building renovation and demolition is typically the responsibility of the Physical Plant in charge of or the University's asbestos abatement contractor. Under no circumstances should suspect asbestos containing material be disposed of in domestic waste or with construction debris.

Polychlorinated biphenyls (PCBs) are a highly regulated material and disposal is very difficult and costly. PCBs in concentrations of less than 50 parts per million will be managed by (EH&S) as hazardous waste. Any waste over 50 ppm is regulated as a "PCB waste" and will require special handling and disposal; please contact EH&S for instructions on handling this material. Any gloves or materials that are used with PCBs will also require disposal as a hazardous waste. The use of PCBs in concentrations over 50 ppm in research should be carefully reviewed. PCB disposal by the University could be restricted at any time due to changes in federal regulation. Used light ballasts from fluorescent light fixtures that were manufactured prior to 1978 or that are not clearly labeled as being non-PCB are managed by EH&S as hazardous waste.

Gas Cylinders

Rental and return of gas cylinders to gas vendors is the recommended practice for the management of cylinders. This eliminates the creation of a hazardous

waste. The purchase of **lecture bottles** or other non-returnable pressurized gas cylinders is strongly discouraged because of the difficulty and cost of disposing of the empty containers. Disposal of empty or partially filled cylinders is handled by the EH&S.

Waste Oils and Lubricants

Waste oils and petroleum lubricants are not classified as hazardous waste by EPA. However, the University has chosen to manage these products in an environmentally-conscious manner. For proper disposal, contact the Director , Physical Plant or the University's vender.

Broken Glassware

Broken glassware should be placed into an appropriate broken glassware container. Since they will be picked up by the custodial staff these containers should be labeled with the words "**Broken Glass.**" **Do not** place broken glassware, pipettes or other sharp-edged materials of any type into the regular trash.

Empty Containers

Containers that have held hazardous materials should have their labels defaced, should be triple rinsed with water or a suitable solvent to remove any residue, and then should be disposed of in the regular trash.

CHAPTER 5

WASTE MINIMIZATION

Alabama A & M University is committed to reducing both the amount and toxicity of hazardous wastes that are generated as a result of University operations. The University is required by law to develop strategies to reduce its hazardous waste. Listed below are a few strategies that you as a generator should consider in order to meet the goal of reducing hazardous waste.

Substitution

Replace the toxic or other hazardous materials you use with less hazardous or non-hazardous substances. This is the best way to minimize hazardous waste. Mercury thermometers can be replaced with alcohol thermometers. The debris and mercury from a thermometer must be dealt with as hazardous waste, while a broken alcohol thermometer can be disposed of as broken glassware. Chromium- and acid-based glassware cleaning solutions can be replaced withalconox or no-chromix glassware cleaners. Toluene-based flammable scintillation cocktails can be replaced with non-flammable cocktails. EH&S can assist laboratories and others in finding substitutes for hazardous chemicals.

Microchemistry

Use minute quantities and small-scale chemistry instead of large amounts of chemicals in laboratory experiments. This is currently being done in some labs on campus. The use of computer modeling instead of experimentation, especially in teaching situations, should be considered as an alternative to the creation of chemical wastes.

Redistillation

Reclaim solvents for reuse by using a distillation process in the laboratory. This method will reduce the amount of replacement solvents and the volume of hazardous waste generated.

Recycling and Redistribution

Chemicals that are unused or unopened can often be redistributed to other labs or work areas for reuse, saving both disposal costs and new product costs for someone else. The University will have an on-line system utilizing e-mail for redistributing unopened and unused chemicals to other University labs and service areas free of charge. Contact the EH&S office for more details or to be included on the distribution list.

Laboratory Destruction

Some chemicals can be neutralized or made exempt from hazardous waste regulations by destruction in the laboratory. **This must be done as part of the experiment and must be done according to documented methods.** If you are uncertain, contact the EH&S prior to attempting laboratory destruction to insure that the process will be safe and that the end result will meet regulatory requirements. An example of lab destruction would be neutralizing a strong acid or alkaline with a buffering solution. Note that neutralization must take place as part of an experiment. **Waste cannot be accumulated for neutralization at a later date.** Laboratory destruction is considered to be a less desirable strategy than substitution or microchemistry.

University faculty and staff with ideas or suggestions on ways to safely decrease the amount and/or toxicity of waste generated are encouraged to contact the EH&S office so that the information can be passed on to other University operations. Generators who would like assistance in reducing their waste generation should contact the EH&S staff who will assist them with ideas and/or a review of their operations. A useful publication entitled "Less is Better" (available from the American Chemical Society) focuses specifically on the reduction of laboratory waste.

CHAPTER 6

EMERGENCY AND SPILL RESPONSE

The purpose of this section is to provide information to persons working with chemicals on the steps to take when chemicals are spilled or released. EH&S is the lead for responding to releases and accidents involving hazardous materials.

Spill Response Procedures

Persons involved with a spill or release of any hazardous material should evaluate the potential danger to themselves, others and the environment before attempting any action (which they must then be properly trained or equipped to handle).

Minor spills of known materials should be cleaned up immediately by personnel in that area. Appropriate personal protective equipment should be used. Chemical protective gloves, safety glasses and clothing covers, such as aprons and lab coats, should be sufficient to handle minor spills of known materials.

For moderate size spills of known materials that cannot be cleaned up without assistance, call the EH &S office. They will provide technical assistance, equipment, supplies, and guidance. All personnel not directly assisting with the cleanup should be kept away from the area involved.

Larger spills of known materials, spills of unknown materials, spills that result in fire or explosion, or spills that are immediately dangerous to life and health, should be treated as emergencies. Evacuate the immediate area of the spill and call campus emergency 5555 . In larger incidents, evacuate the entire building, either personally or with the assistance of the building authority. All personnel leaving the building or area should gather upwind from the spill at a safe distance away as listed in their evacuation plans. Lab managers should verify that all persons are accounted for. Once at a safe location, call the campus emergency number (5555 from any campus phone) and stay on the line until told to hang up by the police dispatcher. Those persons involved with the incident are to remain in the area outside the involved building to assist the emergency response agencies. Information, such as the chemicals or biohazardous agents involved, will be needed by the various responding agencies. After relaying the vital information, lab personnel should notify the principle investigator and the department head.

If any emergency involves personal injury or chemical contamination, call 911 from any campus phone and ask for an ambulance to be sent to the area. Be sure to state the type of contaminant on the victim. In cases where corrosive

chemical exposure to the eyes or body of an individual occurs, carefully assist the injured person to an eyewash station, deluge shower or combination unit. For other chemicals consult the MSDS for that chemical and follow the recommendations in the first aid section. A copy of the MSDS should be available for the ambulance crew and should accompany the victim to the hospital. For exposures to the eyes, flushing with water for a minimum of 15 minutes is recommended. The person should be seen immediately by a physician.

Spill and Release Reporting

All spills and releases of hazardous materials in other than insignificant amounts must be reported to the EH&S office immediately. If the spill or release also involves a radioactive material, then the Radiation Safety office must be notified, too.

Spill Response Equipment

Each area storing or using hazardous materials should have absorbent materials capable of at least stopping the spread of spilled chemicals to drains or other areas. Examples of absorbent materials would be towels, pads, vermiculite and sorbent booms. Most areas that have only small amounts of chemicals could use lab towels or paper towels when compatible with the spilled material. Other areas, such as chemical storerooms and maintenance shops, will require more extensive supplies of sorbent materials. Other protective equipment, such as gloves and eye protection, can be worn for spill cleanup as well as normal chemical usage.

Management of Materials from Spill Cleanup

Materials that are generated as a result of spill cleanup are considered to be hazardous waste if the original material when disposed of would be a hazardous waste. These materials must be placed into appropriate sealed containers and will be managed as any other hazardous waste, i.e. requiring proper labeling and chemical waste lists.

APPENDIX

Definition and Terms

Generator - A person or institution that creates hazardous waste.

Hazardous Material - A material capable of causing harm to humans or the environment.

Hazardous Waste - A waste material that meets one or more of the characteristics identified in state and federal regulations and this manual.

EH&S – Environmental Health & Safety Office

EPA - Environmental Protection Agency.

RCRA - Resource Conservation and Recovery Act, federal act that regulated hazardous wastes.

RSO – Radiation Safety Officer

Satellite Accumulation Point - The place in the lab or work area where hazardous wastes are stored until they are ready for pick up. There must be less than 55 gallons of hazardous waste at any one time at the satellite accumulation point.

Container - A waste receptacle that is capable of being securely sealed, and transported. The container must be compatible with the waste stored in it.

Label - Required wording on each container of hazardous waste. It must state the words **Hazardous Waste** and the name of **all chemicals** contained within.

Mixed Waste - Waste that is both hazardous and radioactive.

HAZARDOUS WASTE GUIDELINES

1. Label all accumulating hazardous waste containers with the words **HAZARDOUS WASTE**.
2. Each container must also have a **label** listing the **specific waste constituents**.
3. Keep containers **closed** except when filling.
4. When the container is full fill out a waste ticket for each container.
5. Call Environmental Health & Safety Office (4091) if you have any questions about hazardous waste management or disposal.

Please post this page in the Hazardous Waste Accumulation Storage Areas

