



## **Hazardous Waste Management**

### **Applicable regulations**

[40 CFR 260 through 40 CFR 271 – Hazardous Waste Management](#)

### **Applicability**

ASU is classified as a hazardous waste generator by the U.S. Environmental Protection Agency and the Arizona Department of Environmental Quality or ADEQ. As a hazardous waste generator facility, ASU is required to comply with a number of hazardous waste laws and regulations. The primary objectives of the program are to protect human health and the environment and insure compliance with university, local, state, and federal hazardous waste regulations. University personnel and facilities involved in activities that generate hazardous waste are also subject to a number of requirements designed to protect personnel, property and the environment.

University hazardous waste management programs can be somewhat complex and confusing because of the enormous variety of hazardous waste generated; it is the responsibility of each individual university generator to comply with accumulation requirements. The following guidelines have been prepared for university personnel to facilitate proper hazardous waste management and insure compliance with applicable hazardous waste laws and regulations, particularly individual site accumulation requirements.

### **Disposable containers**

Containers holding hazardous waste must be in good condition, non-leaking and compatible with the waste being stored. The container must always be closed during storage, except when it is necessary to add or remove waste. Hazardous waste must not be placed in an unwashed container that previously held an incompatible waste or material. Incompatible wastes must not be mixed or stored in the same container. If a container holding hazardous waste is not in good condition, or if it begins to leak, the generator must transfer the waste from this container to a container that is in good condition, or manage the waste in some other way that prevents a potential for a release or contamination. A storage container holding a hazardous waste that is incompatible with any waste or other materials stored nearby in containers must be separated from the other materials or protected from them by means of a partition, wall or other device. One-gallon glass hazardous waste containers with screw top lids are available at no charge to university personnel from EHS. Also, the original chemical container can serve as a waste container as long as the above requirements are met. Containers may exceed one-gallon as long as they meet the above stated requirements. However, containers in excess of five gallons must have prior approval from EHS before being used as a hazardous waste storage container. Contact EHS to check the availability of larger containers.

### **Container labeling**

While hazardous waste is being accumulated, the container holding the waste must be marked with the words "Hazardous Waste" and with words that identify the contents of the container. For the purpose of waste determination, a complete inventory of wastes being accumulated in the container must be kept with the container. This can be accomplished by using hazardous waste tags and labels available through EHS. If the original container is to be used for waste disposal, the words "Hazardous Waste" shall be legibly written with a permanent marker above or next to the chemical name. If the container is to be used for a waste different from the original contents, the original label must be removed or rendered illegible and a new label placed on the container. Again, hazardous waste must not be placed in an unwashed container that previously held an incompatible waste or material. The container must also be marked with the hazard associated with the waste e.g., flammable, corrosive, toxic, etc.



### Hazardous waste tags

Hazardous waste tags must be filled out by the waste generator. The waste tags are used by EHS personnel to identify waste containers and determine waste compatibilities. Improper or inaccurate tagging could present a serious safety threat to EHS personnel handling these wastes. EPA and ADEQ review the tags to determine the university's compliance with hazardous waste regulations. Inadequate or incorrect information on waste tags may result in the container not being picked up. Therefore, in the interest of efficiency, please make certain the waste tags are complete, accurate, and legible to avoid having to reschedule a pick-up. **The following information must be included on the tags:**

- **Amount:** Give total volume or weight of each chemical in the container.
- **Building or room:** List physical location in which the waste is being held for collection.
- **Category:** Choose the appropriate category hazard descriptions from the list below and write it in the category block. Include other hazards e.g., "carcinogen" as well.
- **Chemical name:** Use full chemical name, not formulas. Product names or trade names are acceptable if the manufacturer's name and address or a material safety data sheet can be supplied with the material. Also, indicate the concentration of the chemical used in percent, molarity, ppm, etc.
- **Department:** Identify the university department with which the generator is affiliated.
- **Generator:** List name of the individual responsible for preparing the waste and completing the wastetag. Phone: Supply a telephone number at which the generator can be reached during normal university hours 8am - 5pm. Date: Mark the date on which the waste container is ready for pick-up.
- **Volume %:** List percentage of the total volume of each chemical contained if more than one compound is being accumulated in the waste container.

Radioactive material	Combustible material	Spontaneously combustible
Corrosive material (solid)	Flammable liquid	Corrosive material (Liquid)
Poisonous compressed gas	Pyrophoric	Water reactive
Poison	Oxidizer	Explosive
Flammable gas	Self-reactive	Irritant
Non-flammable gas	Flammable solid	Biohazard / infectious

If the waste material has more than one hazard, it should be classified according to the order of hazard as listed above. If the material is an explosive, etiologic agent, cyanide, mercury or an organic peroxide, it will require special handling and you should contact EHS as soon as possible.

**pH:** The pH of the solution is required for aqueous wastes. pH can be taken using pH paper or a pH meter.

### Segregation

As previously stated, all chemicals are to be considered hazardous waste when disposed. It is the policy of the university that no waste be disposed or discharged into the sanitary sewer. Whenever possible, chemical wastes should be collected and segregated by the following categories to ensure safe handling and to expedite disposal:

- Bases, caustics and cyanides.
- Explosive and shock sensitive materials - Examples: picric acid, perchloric acid, dinitrophenyl hydrazine.
- Flammable liquids - non-halogenated organic solvents.
- Flammable solids - Examples: camphor, naphthalene.
- Gases - Examples: lecture bottles, small non-returnable cylinders.



- Inert materials - Examples: asbestos and silica.
- Inorganic acids - Examples: hydrochloric acid, hydrofluoric acid - collect separately in plastic container, sulfuric acid, nitric acid, phosphoric acid.
- Metal salts and heavy metals - collect heavy metals separately.
- Non-flammable organic compounds - Examples: halogenated organic solvents, glycerol, aniline;
- Organic acids - Examples: formic acid, acetic acid.
- Oxidizers - Examples: nitrates, permanganates, perchlorates, nitric acid over 40% - collect separately, chromic acid "cleaning solution" - collect separately.
- Peroxidizers, including peroxidizable solvents.
- Pesticides and herbicides.
- Polychlorinated biphenyls or PCB's and dioxins - accumulate separately.
- Polymerizables.
- Radioactive materials - these are handled by the Office of Radiation Protection 480-965-6140.
- Reactive materials - react when exposed to water, air, or friction, Examples: alkali and alkaline earth metals, acid halides, phosphorous pentoxide, thionyl chloride.

### **Scheduling and waste pick-up**

When the waste container is ready for pick-up - **Note:** Do not fill waste container beyond the bottom of the neck of the container - and the waste tag has been completed, use the on-line hazardous waste pickup request or the link located on our website this will initiate the waste pick-up process. Waste is routinely picked up throughout the campus Monday through Friday. If you have waste in one location which totals more than 55 gallons in overall amount, or if you have a total of one quart of all acutely hazardous waste, please note that in the comments section of the request. Include the hazardous waste tag numbers on the pickup request.

### **Waste oil**

Waste oil is collected and recycled. However, waste oil must be kept as uncontaminated as possible. EHS requires oil to be kept separate from other chemicals, particularly solvents, metals and pesticides. If the oil is contaminated, indicate so on the hazardous waste tag and it will be managed and disposed of in an approved manner.

### **Penalties**

Severe civil and criminal penalties can be imposed upon the generator and university for irresponsible and illegal hazardous waste management and disposal practices. These procedures have been designed to properly and economically manage the university's hazardous waste while complying with all applicable federal, state and local regulations. EHS is available for technical assistance and encourages all university personnel to utilize the service. Please contact EHS if you have any questions regarding responsible hazardous waste management or need additional information or assistance in managing your hazardous waste.

### **Additional information**

Contact ASU EHS Office: [asuehs@asu.edu](mailto:asuehs@asu.edu).