

# Hazardous Waste Management Compliance Guidelines

## INTRODUCTION AND SCOPE

Arizona State University's (ASU) academic and research laboratories, along with other university operations, e.g., Facilities Management, generate a variety of hazardous chemical wastes. ASU is classified as a hazardous waste generator by the U.S. Environmental Protection Agency (EPA) and the Arizona Department of Environmental Quality (ADEQ) and has been assigned an EPA identification number (AZD042017723).

As a hazardous waste generator facility, ASU is required to comply with a number of hazardous waste laws and regulations. Environmental Health & Safety is responsible for coordinating an effective hazardous waste management program for university facilities. 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; therefore, each individual university generator must 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.

## REQUIREMENTS

### Waste Determinations

State and federal hazardous waste regulations specifically require the person who generates a waste to determine if the waste is a hazardous waste by using the following methods:

1. Determine if the waste is listed as a hazardous waste in the regulations; OR
2. If the waste is not listed as a hazardous waste in the regulations, determine if the waste exhibits any of the characteristics of a hazardous waste, i.e., ignitability, corrosivity, reactivity, or toxicity, by either:
  - o testing the waste according to approved EPA methods or according to an equivalent approved method; or
  - o applying knowledge of the hazard characteristic of the waste in light of the materials or the processes use

For your convenience, consider all waste chemical formulations (abandoned, used, out dated, or otherwise waste-like chemicals and formulations) as a hazardous waste unless the particular waste has been determined not a hazardous waste by EH&S. Contact EH&S for technical assistance at (480) 965-8554.

State and federal regulations regard certain chemicals as "acutely hazardous wastes". These chemicals exist on a list ([see acutely hazardous waste list](#)) and must be handled separately. Chemicals which exist on this list must be reported immediately to Environmental Health & Safety at the point that they become a waste. No more than a total of one quart, at any time, of one or in any combination of all the chemicals on this list are allowed to remain in the laboratory once the chemical(s) become waste.

Whenever there is a doubt about a waste being a hazardous or non-hazardous waste, contact EH&S for technical assistance at (480) 965-8554. Environmental Health & Safety (EH&S) will not accept unknown wastes. If the waste is determined to be a hazardous waste, it must be managed accordingly. Disposal containers, labeling, hazardous waste tags, segregation, and scheduling of pickups must all be managed in an appropriate manner.

## **Disposal 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 Laboratory Stores, Engineering Research Center, Life Sciences C wing, and the Art building. 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 EH&S before being used as a hazardous waste storage container.

## **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 Laboratory Stores and the other designated sites on campus. Hazardous waste labels are provided to facilitate proper record keeping during waste accumulation. 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.

## **Hazardous Waste Tags**

Hazardous waste tags must be filled out by the waste generator. The tags are used by EH&S personnel to identify waste containers and determine waste compatibilities. Improper or inaccurate tagging could present a serious safety threat to EH&S 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 will result in the container not being picked up and a note explaining the discrepancy. 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:

**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. This is especially important for the following substances: arsenic, barium, cadmium, chromium, mercury, lead, selenium,

silver, copper, nickel, zinc, thallium, cyanides, sulfides, polychlorinated biphenyls (PCB's), phenolics, and halogenated organic compounds.

**Amount:** Give total volume or weight of each chemical in the container.

**Volume %:** List percentage of the total volume of each chemical contained if more than one compound is being accumulated in the waste container.

**Generator:** List name of the individual responsible for preparing the waste and completing the waste tag.

**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.

**Department:** Identify the university department with which the generator is affiliated.

**Building/room:** List physical location in which the waste is being held for collection. Incomplete or inaccurate information may delay pick-up.

**Category:** Choose the appropriate category descriptions from the list below and write it in the category block. Include other hazards (e.g., "carcinogen") as well.

Radioactive material  
Corrosive material (solid)  
Poisonous compressed gas  
Poison  
Flammable gas  
Non-flammable gas  
Combustible material  
Flammable liquid  
Pyrophoric  
Oxidizer  
Self-reactive  
Flammable solid  
Spontaneously combustible  
Corrosive material (liquid)  
Water-reactive  
Explosive  
Irritant  
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 EH&S 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**

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 in 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 (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, call (480) 965-3899 or (480) 965-8554, forward the top copy of the waste tag to EH&S via campus mail (Environmental Health & Safety - 5412) or process the [request on line](#). This will initiate the waste pick-up process. Waste is routinely picked up throughout the campus Monday through Friday. Requests received after 9:00AM will not be scheduled for pick-up on the day of the request unless extreme circumstances exist. Campus pick-ups are focused on geographical areas, so pick-up requests may require a full week to complete. 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, [contact EH&S immediately for pick-up](#). Please indicate the necessity of these situations when you call for assistance. The exact location of the waste container, e.g., building and room number, telephone number, contact person, and number of containers must be provided in order to facilitate timely pick-up. For emergency pick-ups, e.g., explosives, contact EH&S at (480) 965-3899 or (480) 965-8554 or the ASU Department of Public Safety Dispatcher after hours at (480) 965-3456. Should specific time scheduling be required, please indicate this so EH&S can accommodate your schedule if reasonable to do so.

## **WASTE OIL**

Waste oil is collected and recycled. However, waste oil must be kept as uncontaminated as possible. EH&S requires oil to be kept separate from other chemicals, particularly solvents, metals, pesticides, and PCB's. If the oil is contaminated, indicate so on the 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. EH&S is available for technical assistance and encourages all university personnel to utilize the service. Please contact EH&S if you have any questions regarding responsible hazardous waste management or need additional information or assistance in managing your hazardous waste.

## **APPLICABLE REGULATIONS**

40 CFR Parts 260 through 271  
A.A.C. R18-8-260 et seq.

## **UNIVERSITY DOCUMENTATION AND MANUALS**

Arizona State University Chemical Hygiene Plan  
Arizona State University Pollution Prevention Plan  
Arizona State University Hazardous Waste Accumulation Facility Emergency Contingency Plan  
Research and Sponsored Programs Policies and Procedures RSP 105 Hazardous Chemical Waste

## **TECHNICAL CONTACT**

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