



UCSD's Hazardous Materials Business Plan Training

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Introduction

What is the Hazardous Materials Business Plan? The County of San Diego regulates establishments that use hazardous materials, dispose of hazardous wastes, and/or have underground storage tanks — all of which apply to our campus and medical centers. UCSD is required by the County to establish a Hazardous Materials Business Plan for emergency response to a release or threatened release of hazardous material, and is required to prepare a risk management and prevention program. The Hazardous Materials Business Plan is distributed to surrounding fire and hazardous materials emergency response units to familiarize them with the quantities and location of hazardous materials they may encounter when responding to emergencies on campus or the medical centers.

Training is a key component of UCSD's Hazardous Materials Business Plan. All UCSD personnel working with hazardous materials are required to receive annual training in safe handling of hazardous materials, waste disposal, and basic emergency response.

What to do: For consistency, EH&S has created a training plan addressing these topics. Read and implement the plan below, adapting it to operations in your shop or studio. The Hazardous Materials Business Plan information for your area of responsibility must be reviewed annually by all employees who use chemicals as part of their job duties.

Documentation of this training must be retained by each employee's supervisor. Use the Training Log at the end of this document to record who receives this training. The County Health Department intends to audit UCSD compliance on this matter during their annual inspections.

Contacts:

- **Questions on the Hazardous Materials Business Plan as it applies to UCSD?**
Contact [Environment, Health & Safety](#), (858) 534-9745.
- **Questions about hazardous waste storage and disposal?**
Contact [EH&S Environmental Management Facility](#), (858) 534-2753.

Section I – Hazardous Materials Handling

- Read [General Chemical Safety Guidelines](#) for more information.

Work with hazardous materials requires preplanning, proper and adequate equipment, and trained, knowledgeable personnel conducting and supervising the work. These operations require the consistent application of good work practices and skills to control the hazard while achieving the goal of the experiment, procedure, or process. Methods to reduce potential exposure and hazard include:

- Substitution with less hazardous products
- Reduction in the scale of the experiment / volume of materials used to smallest practical levels
- Effective use of engineering controls, such as fume hoods, glove boxes, spray booths, etc.
- Use of proper personal protective equipment, such as safety glasses, gloves, etc.

Preplan all hazardous materials usage and develop spill / release contingency plans based upon the quantity and properties of all materials involved. A variety of source information (see below) should be reviewed during the planning process. Do not start work with hazardous materials until the criteria developed during the planning process is satisfied.

Sources of Chemical Information

1. Material Safety Data Sheets (MSDS): An MSDS is a detailed information bulletin about a chemical, describing physical and chemical properties, health hazards, routes of exposure, precautions for safe handling, use and storage, spill response and first-aid procedures. MSDSs are available via the Internet from a variety of servers at [Material Safety Data Sheets Sources](#).

Hardcopy MSDSs are also available upon request from [Environment, Health & Safety](#), (858) 534-3660.

2. Chemical Manufacturers, Distributors, Technical Service Representatives: Manufacturers can be valuable resources regarding the use, handling, and storage of hazardous materials. Direct contact with representatives, review of technical bulletins, and specification sheets can provide valuable safety, storage, and use information.

3. Primary UCSD resources for hazardous material and chemical safety information:

- EH&S Office – (858) 534-3660
- EH&S Environmental Management Facility – (858) 534-2753
- Poison Information Center – (800) 876-4766
For hearing impaired – (800) 972-3323

Section II – Hazardous Waste Storage and Disposal

General Hazardous Waste Requirements

Segregate all chemical waste materials before placing into waste containers. The following abbreviated instructions are presented for general training. Please consult the [Hazardous Waste Management Menu](#) or contact EH&S at (858) 534-2753 for detailed information, or information not covered in this document.

Do not pour chemical waste into the sewer or place it into the municipal trash without

consulting EH&S to ensure regulatory compliance.

General Storage Requirements

- Read [How to Store and Dispose of Hazardous Chemical Waste](#) for more information.
- Designate a specific place in the laboratory or workroom for waste collection. Label the area with a "DANGER: Hazardous Waste" sign (available from EH&S). Fume hoods may be used temporarily to store small quantities of waste materials, but should not serve as designated waste storage areas.
- Store all waste containers in secondary containers. Secondary containers can be trays, dishpans, or any container that will contain 110% volume of the waste.
- Label all waste containers properly. Procure chemical [Hazardous waste tags](#) from the UCSD Storehouse. Securely attach the waste tag to the container at the time you begin using it for waste collection. Regulations require the accumulation start date to be entered on the tag when the first drop of waste is placed into the container and that the contents of the waste container be thoroughly itemized using full chemical names.
- Fill out all information. EH&S waste handlers rely on waste tag information when they make decisions on waste compatibility and handling. Their safety depends on accurate information! Accurate information is the responsibility of the waste generator filling out the waste tags.
- Chemical wastes should not be stored for longer than 90 days before [requesting collection](#) by EH&S.

Waste Collection Procedures and Requirements

- Read [How to Request a Hazardous Waste Collection](#) for instructions.

Chemical Waste

Any liquid, solid, semi-solid, or gaseous material which is intended to be discarded and meets any of the following characteristics must be properly disposed of through UCSD's Hazardous Waste Management Program.

- Read [How to Identify Hazardous Chemical Waste](#) for determining if a chemical waste must be stored and disposed of as hazardous chemical waste.
- Contact EH&S at (858) 534-2753 if you need help in determining whether or not you are generating a hazardous chemical waste.

Labeling

- Read [How to Use Chemical and Radioactive Hazardous waste tags](#) for more information.

A UCSD Hazardous waste tag must be securely attached to your container at the time waste is first accumulated. Deface all other labels on containers you decide to use as waste receptacles.

All of the following information must appear on the Hazardous waste tag:

- An affixed Waste Generator bar code label or [Waste Generator Number](#) (WGN)
- Generator's contact name and phone number
- Building and room number where the waste is stored for collection
- List each isotope and its total activity separately
- Hazard classification (flammable, poison, corrosive, etc.)

- Date (when the first drop of waste was added to the container)
- Chemical name (use full chemical names, not chemical formulas or abbreviated chemical names)
 - Chemical names must be specific
 - Do not use nonspecific names such as organic waste, waste solvents, acid waste, etc.
- Volume percent of each constituent totaling 100% (non-hazardous components such as water should also be listed)
- Age of material
- pH (if applicable; if not, mark N/A)

Waste Containers

- Containers must be compatible with the chemical waste they will contain. The size of the container should correspond to the quantity of waste being discarded.
- Store liquids in screw-capped containers that will not leak if tipped over. Corks, parafilm, or lab beakers that will not stand on their own are not acceptable. If necessary, transfer waste material to a different container. Containers with liquid waste must be no more than 90% full.
- Liquid waste must not contain solids. Labware such as tubes, pipettes, stirring bars, etc., may not be placed in bottles containing liquid waste.
- Store chemically contaminated solid materials in sealable containers suitable for transportation. Clear plastic bags (Storehouse stock #5015) must be used to allow visual inspection by the EH&S waste handlers.
- Place chemically contaminated sharps and piercing objects (needles, razors, scalpel blades; broken glass and plastic; pipettes, pipette tips, Eppendorf tubes, capillary tubes; and sharp-cornered objects in a rigid, leak-proof container.
- Containers must be leak-proof and free of exterior contamination.

Materials Segregation

- Read [Chemical Compatibility Guidelines](#) for more information.
- Separate organics and inorganics for disposal purposes.
- Segregate chemical waste by hazard class (e.g., flammable, poison, reactive, oxidizer, acidic, basic, or other). Follow basic safe storage procedures: keep flammables separated from oxidizers, acids from bases, cyanides from acids, etc.
- OXIDIZERS – Oxidizers react vigorously with reducing materials. The reaction can lead to fire or explosions. Do not mix oxidizers with flammable solvents, combustibles (such as paper or wood), or other reducing agents. Keep stored oxidizers away from these incompatible materials.
- ACIDS – Do not mix acids with any other types of chemicals for disposal. Safety and disposal requirements dictate that waste Hydrofluoric acid should never be mixed with other chemicals or acids. List acid strength and solution pH on the Hazardous waste tag. This information is important because strong acids may react adversely during processing.
- BASES – Keep bases separate from all other waste. Do not mix acids and bases in the same waste container! Violent reactions can occur. List solution pH on the Hazardous waste tag.
- Mercury – Do not mix elemental mercury with any other chemicals or contaminants if possible. Mercury mixed with glass and plastic should be placed in a separate container than elemental mercury. Please do not use sulfur, charcoal, or water during cleanup of mercury spills. All towels and debris should be segregated and labeled as mercury-contaminated debris. Double-bag mercury (metallic) thermometers in clear, plastic bags. Note: Mercury disposal is very costly. Consider using the alternative temperature measurement devices now available; they are accurate, biodegradable, and do not contain mercury.

- Separate halogenated solvents from non-halogenated solvents.
- Separate solvents that have a high BTU value (such as ketones and alcohols) from solvents that have low BTU value (such as halogenated solvents or solvent solutions with a high water content.)
- Do not combine oil or solvent waste with metals! Disposal is nearly impossible; and when it is available, the cost is exorbitant.
- EMPTY CHEMICAL CONTAINERS – Small (equal to or greater than five gallon) empty containers can be disposed of in the dumpsters if:
 - No hazardous material can be poured or drained from the container, OR
 - No hazardous material remains in the container that can feasibly be removed
 - Read [How to Dispose of Empty Hazardous Materials Containers](#) for more information.

IMPORTANT: Never place full or partially full containers, or any containers that do not comply with the aforementioned instructions, in the regular trash or dumpster. Store and dispose of them as hazardous waste.

- GAS CYLINDERS – With the exception of lecture bottles, all cylinders can be returned to the manufacturer for recycle and/or reuse — even if product is still in the cylinder. Returns are arranged through the UCSD Storehouse order desk (536-3225). Cylinders are returned at no cost to UCSD.
- LECTURE BOTTLES of compressed gases are extremely expensive to dispose of. Before purchasing a lecture bottle of compressed gas, ask the manufacturer if they will take the cylinder back, whether or not it is empty. If they will not, it is more cost effective to lease a larger tank from the UCSD Storehouse.
- If you are certain the cylinder is empty and the valve has not malfunctioned, write EMPTY in bold pen on both the label and the metal cylinder. Write EMPTY on the Hazardous waste tag and place it on the cylinder neck. EH&S will remove the valve, deface the label, and send it to a metal recycler.
- If the cylinder is *not* empty, state on the Hazardous waste tag approximately how much product is left. Ensure all cylinders have a valve cap installed prior to collection.
- Read [Compressed Gas Overview](#) for more information.

Section III – Emergency and Spill Response Procedures

Carefully read the [UCSD Emergency Guide](#) (hanging telephone index), unless you never work with the materials covered on a given page. Request additional copies of this guide from EH&S at (858) 534-3660.

Site Specific Resources:

Supervisor:

[Department Safety Coordinator](#) and [Area Safety Coordinator](#) (if required):

Evacuation assembly area:

Location of first aid kit:

Location of emergency shower / eyewash:

Location of hazardous materials spill kits:

Location of [personal protective equipment](#) (gloves, goggles, etc.):

Special instructions (emergency shut-offs, specialty equipment, etc.):

Training Log

The following employees have received training in the subjects described below as required by CCR Title 22 Section 66265.16. Refresher training on these subjects must be conducted annually.

Section I – Hazardous Materials Handling

Safe handling of chemicals and other hazardous materials used on the job, location of safety reference materials (MSDSs, SOPs, etc.), personal protective equipment, detection instruments, safe storage areas, etc.

Section II – Hazardous Materials Storage and Disposal

Safe handling and storage of hazardous waste created on the job, location of waste containers, identification tags/labels and informational resources, waste pick-up procedures, record keeping instructions, etc.

Section III – Emergency and Spill Response Procedures

Emergency response instructions, locations of personnel and equipment resources (telephone numbers, fire extinguishers, spill kits, safety showers/eyewashes, first aid kits, etc.), specialty hazard instructions, etc.

Employee Name	Signature	Job Title	Date

Related Topics

- [Emergency Guide](#)
- [Hazardous Waste Management](#) at UCSD
- [Safety Training Resources](#)
- [Occupational Health Services](#)
- [Laboratory & Chemical Safety](#)
- [Safety Coordinator Resources](#)
- [ChemCycle](#) – chemical reuse program

Questions about the Hazardous Materials Business Plan?
Contact [Environment, Health & Safety](#), (858) 534-3660

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