# Hazardous Waste Guidance for Facilities Staff

## OVERVIEW

### Purpose

This guide contains instructions for a list of specific facilities-related wastes as well as general guidance for spills and disposal. This guide was written for the Evergreen facilities, however, if other areas produce the chemical wastes discussed below, they can use this as well.

It is important that any personnel who handle hazardous waste be trained. Employees should be completing their online training before working with hazardous wastes. Contact Environmental Health & Safety (EH&S) if employees need access the HSI (online safety training).

Laboratory and Arts staff should also refer to the Sciences and Arts Laboratory safety manual for hazardous waste specific to their workflow.

### Regulatory Requirements

The College must comply with federal, state, and local hazardous waste regulations. The Washington State Department of Ecology (Ecology) governs chemical waste management. Local city and county governments regulate discharges to the sanitary sewer systems and solid waste landfills. Disposal of hazardous waste in drains, trash cans or by evaporation is a serious violation punishable by fines or imprisonment.

### Environmental Health & Safety (EH&S) Responsibilities

EH&S advises work areas regarding waste accumulation and training requirements. EH&S can also assist with information about waste minimization. Most importantly, EH&S collects and works with outside waste contractors for disposal. All hazardous waste must be disposed of through EH&S.

### Waste Generator Responsibilities

The waste generator is responsible for identifying which waste is hazardous waste and managing them appropriately. EH&S is available for consultation on identification and management of these wastes.

## GENERAL INFORMATION

### CHEMICAL HAZARDS

A chemical waste is hazardous if it has at least one of the following characteristics:

### Ignitable

Materials with flashpoints below 140°F. These chemicals are volatile and flammable, their vapors can ignite when exposed to spark or flame. Examples are acetone, propane, acetylene, oil-based paints, and many solvents.

### Corrosive

Wastes with a pH of 2 or less, or a pH of 12.5 or greater. Examples are muriatic acid and corrosive cleaning solutions that contain sodium hydroxide.

### Toxic

For a waste to be considered Toxic it will have the following values as stated in the Safety Data Sheet. This should be found in Section 11 (Toxicological Information) and Section 12 (Ecological Information).

| Toxic Chemical Table | | | |
|---|---|---|---|
| Fish | Oral Rat | Inhalation Rat | Dermal Rabbit |
| $LC_{50}$(mg/L) | $LD_{50}$(mg/kg) | $LC_{50}$(mg/L) | $LD_{50}$(mg/kg) |
| < 100 | < 5000 | < 200 | < 20,000 |
| Fish $LC_{50}$ data must be derived from an exposure period greater than or equal to twenty-four hours. A hierarchy of species $LC_{50}$ data should be used that includes (in decreasing order of preference) salmonids, fathead minnows, and other fish species. | | | |
| Inhalation Rat $LC_{50}$ data must be derived from an exposure period greater than or equal to one hour. | | | |

Note that if the toxicity levels in the SDS do not agree (example: $LD_{50}$ oral rat is 6000mg/kg and $LC_{50}$ fish is 2mg/L) the value with the highest toxicity must be used ($LC_{50}$ fish = 2mg/L). For dilutions or chemical mixtures see section 5 of the laboratory safety manual or contact EH&S.

### Persistent

Products or mixtures containing halogenated organic compounds (HOC), or polycyclic aromatic hydrocarbons (PAH) would fall into this category. Solvents such as methylene chloride (dichloromethane) or naphthalene (found in some mothballs) are examples of HOCs and PAHs, respectively.

### Reactive

Reactive wastes can become unstable or react violently with water to evolve flammable or toxic gases. While these reactive compounds are not generally seen in facilities, lithium batteries would fall into this category. Follow all use, storage, and disposal guidance regarding lithium batteries to avoid catastrophic reactive events.

## Local Sewer Discharge Limits

The College is regulated by the LOTT discharge limits. Discharge limits exist for many potential contaminants such as fats/oils/grease, pH, settleable solids and heavy metals.

## WASTE ACCUMULATION AND DISPOSAL

Hazardous waste is usually accumulated in facilities locations prior to collection by EH&S. Specific protocols must be followed in these Satellite Accumulation Areas (SAA).

Hazardous Waste in SAAs must be:

- Under the control of the individual generating the waste, or the area must be kept locked and secured; the generator must be able to prevent improper waste from being added to the container.
- Stored in compatible containers with no signs of deterioration or leaking.
- Stored in containers labeled with a completed Hazardous Waste label.
- Stored in closed containers except when waste is being added.
- Stored away from floor drains, storm drains and sinks and/or in secondary containment.
- No more than fifty-five gallons per waste stream (if in a 55-gallon container)
- Collected by EH&S once the container is filled.

Contact EH&S with questions regarding temporary storage of hazardous waste.

### Waste collection and disposal

To request a hazardous waste pickup, contact EH&S. Do not drop off hazardous waste at the Hazardous Waste Building unless instructed by EH&S to do so.

### Waste removal by independent contractors

Service agreements which involve hazardous waste removal, transport, treatment or disposal by other vendors must be approved by EH&S first. Do not make arrangements with outside vendors for collecting hazardous waste without first contacting EH&S.

## EMPTY CONTAINERS

### Reuse

If an empty container is reused for hazardous waste disposal, it must only be used with compatible chemicals. Additionally, the original container label must be removed or defaced, and a Hazardous Waste Label must be applied.

### Recycling

Containers for non-toxic chemicals can be recycled if they are emptied and dried completely and their labels are defaced.

### Disposal

To dispose of an empty container, follow these directions:

- Dry the container in a well-ventilated area.
- Deface the labels on the container.
- Leave the container uncapped and throw the cap away separately.
- When completely dry, it may go in the trash.

Do not leave empty containers in hallways or on loading docks.

### Pesticide containers

To be considered empty, pesticide containers must be triple-rinsed and the rinseate disposed of as hazardous waste. Also, poke a hole in the container or otherwise make it so that the container cannot be used again. Once done, follow the directions above for disposal.

### What is "empty"?

It can be difficult to remove all the contents from a container. *A container is considered "empty" if:

1. You have used normal means, such as **pouring, pumping, shaking, scraping, or scooping to empty the container, and
2. No more than 3% of the contents remain.

*This does not apply to pesticides. See pesticide containers above.

**Do not leave containers open to evaporate the contents. Evaporation is not a legal way to empty a container or dispose of chemicals.

## CHEMICAL SPILLS

### Spill preparedness

All areas must have spill kits appropriate to the types of chemicals that they stock. Include gloves, goggles, and anything else needed to clean up spills safely.

Respirators may be necessary for cleanup of spills of volatile or toxic chemicals. However, the use of a respirator requires prior medical evaluation, training, and fit testing.

### Emergencies

Consult with your supervisor or manager on your specific emergency procedures. In general, and if necessary, evacuate all affected areas by pulling the fire alarm and/or yelling. Then call 911 for help.

### Exposures

In the event of a chemical exposure:

1. Use a safety shower or eye wash (if available), or a bathroom or kitchen sink, to rinse the chemical off.
2. Rinse for at least 15 minutes or until emergency personnel arrive.
3. Call 911 as soon as possible.
4. Contact your supervisor as soon as possible.
5. If you need to leave the area, secure the area and notify other occupants of what happened before you leave, if possible.

Follow instructions for reporting and accident or injury, including an injury report form (301). If the exposure involves a hospital visit, report the incident to EH&S within eight (8) hours.

Safety Data Sheets (SDSs) must be available electronically or in paper format. If individuals need to seek medical attention due to chemical ingestion, inhalation, or bodily contact, send a paper copy of the SDS with the affected individual.

### Spill cleanup

Hazardous material spills that do not endanger anyone may be cleaned up by employees who are properly equipped and trained to do so. Check that spill kits contain the appropriate cleanup supplies and audit them at least annually or after a spill cleanup for completeness.

Hazardous material spills that cannot be safely cleaned by staff or involve spills to storm drains, sanitary sewer, or the environment must be cleaned up by a contractor. Call EH&S at 360-867-6111 to arrange

for a cleanup contractor during business hours. If you need assistance from the spill contractor after hours or weekends, contact the Campus Police and ask the dispatcher to contact the EH&S Staff. When in doubt about whether you need help, contact your supervisor or call the EH&S.

### RESOURCES AND CONTACTS

More information about the hazardous waste collection process, and all the forms you may need, are available on the EH&S communication site.

For specific waste questions, including pickup contact ehs@evergreen.edu.

## SPECIFIC INFORMATION

### AEROSOL CANS

Products that come in aerosol spray cans often contain hazardous materials that are ignitable or toxic. These will need to be managed as hazardous waste. To minimize hazards from aerosol spray cans, avoid buying cans that use an ignitable propellant and instead choose cans that use air or nitrogen.

#### Empty containers

When possible, use aerosols for their intended purpose until empty. When aerosol cans are empty (no pressure and devoid of container contents) they may be disposed as a solid waste into the municipal trash.

#### Accumulation

If an aerosol container is no longer needed or cannot be used for its intended purpose, but is not empty, it is a hazardous waste. It must be placed in an accumulation container that is lined with a heavy-duty inner plastic bag and have a tight-fitting lid. The aerosol cans should be placed in the waste accumulation container in such a way as to prevent any release of remaining contents. For example, remove the red nozzles and pack loosely to avoid stems from inadvertently discharging.

The accumulation container must be labeled with a Hazardous Waste Label that reads “HAZARDOUS WASTE AEROSOL SPRAY CANS”. Check the appropriate hazard(s), such as flammable and/or toxic on the label.

### BATTERIES

Batteries contain hazardous materials and must not be disposed of in the regular trash. This is true even for alkaline batteries.

#### Preparing batteries for recycling

Because batteries contain corrosive and toxic chemicals, they must be packaged properly for disposal.

1. Tape battery terminals.
   Lithium, lead acid, and batteries over 9V must have their terminals covered with tape.
   Use nonconductive electrical tape.
2. Segregate batteries by type.
   Alkaline, carbon zinc, lead acid, nickel cadmium, lithium, etc.
   If you are unsure about the type of battery, contact EH&S.
3. Place in a properly labeled container.
   Contact EH&S for container requirements.

Department of Ecology offers labels that can be printed and attached to the containers.

4. Contact EH&S for pickup.
   Collected batteries must be recycled within one year of the accumulation start date.

**Note: Lithium batteries that are leaking or bulging must be packaged separately. These pose special risks and, in some cases, need to be dealt with immediately. If you have a lithium battery that has failed, contact EH&S. If your lithium battery is actively smoking or on fire, evacuate and contact emergency services.

### Battery routine request

The CUP and Shops have battery collection areas. Follow instructions at the battery station to properly store your batteries. When the collection containers are full contact EHS for pickup.

### Leaking batteries

Batteries rarely leak, but if you find a leaking battery, put it in a plastic bag or container. Wear gloves and wash your hands after handling. Let EH&S know you have a leaking battery for pickup.

For a leaking lead acid battery, the acid can be neutralized with baking soda (sodium bicarbonate). Wear gloves and wash your hands afterwards and be careful with your clothing and shoes. Put the battery and spill debris (paper towels, gloves) in a waste container, label the container, and contact EH&S for pickup.

## FLUORESCENT LAMPS

Used fluorescent lamps and high intensity discharge (HID) lamps are hazardous because the tubes contain a small amount of mercury vapor. Intact bulbs are recycled under special rules (called Universal Waste Rules). Ballast bypass LEDs contain printed circuit boards. These must be recycled as electronic waste.

### Lamp packaging and recycling

Carefully pack used lamps in boxes for transport to the universal waste shed. Once there place the lamps in the appropriately labeled container. If you cannot move the lamps to the universal waste shed by the end of the shift, label the container with a univeral waste lamp label; Include the date the lamps first entered the container and the type of lamp in the container. Used lamps cannot be kept on site for longer than one year.

### Broken bulbs

Follow protocols outlined in the Accident Prevention Program for Broken Glass: fluorescent bulbs. Contact your supervisor or EH&S if you have any questions before you begin.

Avoid any dust created by broken bulbs. Manage the broken bulb as hazardous waste. When cleaned up and containerized, label the box with a Hazardous Waste label and notify EH&S for a waste pick- up.

## LAMP BALLASTS

Older lamp ballasts contain polychlorinated biphenyls (PCBs) that are hazardous to humans and the environment. PCBs are incredibly stable so if they enter the environment through improper handling of PCB-containing materials, they are difficult to remove. PCBs have been banned since 1979, but some of the products, like ballasts, remain in use.

### PCB-containing ballasts

PCB-containing ballasts should be managed as hazardous waste. Put PCB-containing ballasts in a leak-proof container or bag, label with a hazardous waste label, and contact EH&S for pickup.

Alternatively, bring your PCB-containing ballasts to the universal waste shed and put them in the appropriate container. If they are leaking, make sure they are in a plastic bag before adding to the container.

### Unlabeled ballasts

Assume that ballasts which contain no statement regarding PCB content contain PCBs. Some unlabeled ballasts manufactured after 1978 contain a PCB replacement called DEHP. DEHP is a probable human carcinogen. Therefore, manage these unlabeled ballasts similar to PCB-containing ballasts.

### Electronic ballasts

Electronic ballasts that say “contains no PCBs” or “no PCBs” should be collected in the universal waste shed. They should be placed in the appropriate container.

### Leaking ballasts

If the ballast contains PCBs, they are inside the capacitor. If the capacitor breaks open due to ballast failure, the PCBs will contaminate the surrounding material and leak out of the fixture. The capacitor does not always leak when the ballast fails, but when it does, take measures to limit or avoid personal exposure.

If you need assistance with a leaking PCB-ballast, contact EH&S.

## PAINT

Paint shops regularly generate wastes that are flammable and toxic, including leftover paint, waste ink, cleanup sludges and unused solvent.

### Latex paint

Full or partially full cans or pails of unwanted latex, including acrylic latex, paint can be recycled. Paint should remain in the original container with a tightly sealed lid. Paint, not in the original container will not be accepted by our paint recycling vendor.

To dispose of small amounts of latex paint (less than ¼ of one gallon), use kitty litter to absorb paint. Then place the open container in the dumpster.

For a paint can to be considered “empty” it should have less than a ½ inch of paint remaining. Allow the paint to dry a few days before you place empty paint cans in the dumpster.

Minimize latex paint wash water. Use or remove and save as much latex paint as possible before washing equipment.

### Oil-based paint

Any leftover oil-based paint must be disposed of as hazardous waste.

### Solvents

Prevent evaporation; keep solvents tightly closed. Solvent evaporation is not a legal disposal method. Dispose of solvents as hazardous waste when it loses its cleaning effectiveness.

## PESTICIDES

You must also ensure that pesticides and fertilizer products, rinseate and wash waters are prevented from being spilled or otherwise released into the environment in an uncontrolled manner.

### Waste minimization

Eliminate or reduce the generation of contaminated water. Any contaminated water should be prevented from moving off site to minimize the amount of environmental impact.

Mix only enough for immediate use to avoid leftover material.

Mix and use the chemical products as directed by the container labeling.

Return unused agricultural chemicals to the distributor or manufacturer for disposal. Most companies will accept them. EH&S is available to assist with return shipments.

### Storage

Store pesticides in a locked area, preferably indoors. Use secondary containment for leaks and spills.

Notify EH&S, and your supervisor, of any spills. Spills that do not endanger anyone may be cleaned up by employees who are properly equipped and trained to do so.

### Empty containers

To dispose of empty containers, triple rinse the container, collect the rinseate as hazardous chemical waste, remove labels and render the container unusable. Then dispose of containers in the regular trash.

## USED SHOP TOWELS

Shop towels are commonly used with cleaners or solvents to remove oil, dirt and grease. The cleaners, solvents, and oils on the shop towels after cleaning are many times ignitable or toxic or both. Therefore, shop towels must be treated like hazardous waste.

### Cloth versus paper shop towels

Whether using cloth or paper shop towel, if they are contaminated with hazardous chemicals, cleaners, or oil they need to be treated as a hazardous waste. Contaminated cloth towels can be laundered offsite. Contact EH&S if you are interested in this option.

### Collecting used shop towels

Shop towels not used with hazardous chemicals, greases, or should be separated from other used shop towels and can be laundered.

Shop towels contaminated with hazardous chemicals must be collected in closed containers labeled with “contaminated shop towels” or “used shop towels”. Free liquids must be removed from the towels before placing them in the containers and the liquids reused or disposed of as hazardous waste.

Make sure these containers separated from all sources of ignition. “No Smoking” signs must be posted at all accumulation areas.

If you use shop towels for incompatible wastes, segregate the towels in different containers.

Avoid the use of chlorinated solvents. These require special handling and a segregated container. Whenever possible, use the least hazardous solvent.

## ELECTRONIC WASTE

Electronic waste or e-waste are electronic items that cannot be thrown away in the trash. Printed circuit boards contain heavy metals and other hazardous materials. For that reason, most electronic materials need to be recycled.

### Is it e-waste?

Below is a list of some common materials that are considered e-waste. If in doubt, contact EH&S to see if your electronic material needs to be recycled.

- Televisions
- Computers
- Laptops
- Monitors
- Tablets
- Keyboards
- Printers
- Cell Phone