


Hazardous Waste Training

Introduction:

- The United States Environmental Protection Agency has instigated an enforcement initiative targeting colleges and universities. Several universities have been fined (and/or ordered to invest in environmental projects) for violations of hazardous waste regulations in amounts in excess of \$100,000 ([click here to see a list of affected universities](#)). A review of Wright State University's hazardous waste management program in comparison to violations found at other universities has uncovered areas requiring change. This training program has been developed in an effort to bring Wright State University's hazardous waste program to a level consistent with recent EPA interpretations of applicable regulations.

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- This training is for any person at Wright State University who would like to dispose of any unwanted chemical material. ***This training is a requirement of the Ohio Environmental Protection Agency (EPA).*** To successfully complete this training course you must complete and submit the information required at the end of the training. Only after receiving the information, certifying that you have received this training, will Environmental Health and Safety (EHS) be permitted to pick up any unwanted chemical material from you.

- If, after completing this training program, your area is identified per EPA regulations as a satellite accumulation area, you will be required to manage your area as such and complete an additional training program. EHS will notify you if your area is considered a satellite accumulation area.



Training Summary:

- This training program will introduce you to the EPA's hazardous waste regulations. Although confusing and lengthy, the regulations you need to be aware of are summarized in a brief and concise manner in the next twelve slides. Also included is a summary of Wright State University's hazardous waste compliance strategy and a section on your duties as someone who has a level of responsibility for ensuring proper disposition of unwanted chemical material. The instructions listed with the slide titled ***Your Duties*** must be followed in order for Environmental Health and Safety to pick up any unwanted chemical material from you.

Training Requirements:

- [Ohio Administrative Code 3745-54-16](#) requires all Wright State University personnel involved in the generation or management of hazardous waste to complete a training program that teaches them to perform their duties in a manner that ensures the university's compliance with the hazardous waste regulations. The training must be performed annually and records indicating the name, job title, and brief job description of each person receiving the training kept on file. This training program is designed to comply with [OAC 3745-54-16](#). If you are being asked to complete this training then you have been identified as a person whose duties have affected, or may affect in the future, the university's compliance with the hazardous waste regulations.

Hazardous Waste Regulations:

- The Ohio Environmental Protection Agency (OEPA) has authority under the Resource Conservation and Recovery Act to regulate the management of hazardous waste. Wright State University's Department of Environmental Health and Safety has been given the responsibility for ensuring the university's compliance with these OEPA regulations.
- The OEPA regulations governing the management of hazardous waste are codified in Ohio Administrative Code (OAC) Chapter 3745 and can be found by visiting the [OEPA's Division of Hazardous Waste Management](#) web site.

What is a Hazardous Waste?

- To understand what is a hazardous waste you must first become familiar with OEPA terminology. A "hazardous waste" is a "waste" that is listed by the OEPA as being hazardous or that demonstrates one or more hazardous characteristic as defined by the OEPA. However, before something can be a "hazardous waste" it must meet OEPA's definition of "waste". OEPA's definition of "waste" can be found in [OAC 3745-51-02](#).
- Generally, a waste is any solid, liquid, or gaseous material, regardless of its mass or volume, that is discarded by being disposed of, burned, or recycled (there are some exceptions).
- Unwanted chemical material generated by Wright State University that can be considered hazardous include spent solvents, chemicals produced or used during research and teaching activities, contaminated used oils, maintenance and custodial chemicals, batteries, mercury containing equipment, gas cylinders, photographic wastes, unused or surplus reagent chemicals, acids and bases, animal preservatives, chemically contaminated lab trash, paint, and fluorescent lighting waste.

Listed and Characteristic Hazardous Waste:

- Once a determination is made that a material meets OEPA's definition of waste the next step is to determine if the OEPA considers the waste to be hazardous. A waste is considered hazardous if it meets any of the criteria found in [OAC 3745-51-03](#). Generally, a waste is considered hazardous if it is explicitly listed as such or if it demonstrates one or more hazardous characteristic as defined by the OEPA.



Listed Hazardous Waste:

- The lists of hazardous waste found in [OAC 3745-51-31](#), [3745-51-32](#), and [3745-51-33](#) include waste from non-specific sources. These include various spent solvents, wastewater, and other spent solutions regardless of how they were generated. The lists also include waste from specific sources such as waste generated during the production of certain chemicals. Finally, the lists include specific chemical products, off-specification products, container residues, and spill cleanup waste from spills of listed waste. Each listed hazardous waste carries a four digit alphanumeric code that is used by the generator of the waste for reporting to the OEPA. For example, spent acetone is viewed as an F003 waste, unused sodium azide a P105 waste, and elemental mercury a U151 waste.

Characteristic Waste:

- If a generated waste is not a listed hazardous waste, it can still be considered hazardous by the OEPA if a representative sample of it demonstrates any of the hazardous characteristics found in [OAC 3745-51-21](#), [3745-51-22](#), [3745-51-23](#), or [3745-51-24](#). These characteristics are ignitability, corrosivity, reactivity, and toxicity and there are specific test methods required to determine if a waste demonstrates any of the characteristics. These wastes also carry a four-digit alphanumeric code beginning with the letter "D."



Ignitable Waste:

Generally speaking, a waste exhibits the characteristic of ignitability if a representative sample of the waste has any of the following characteristics:

- Is a liquid and has a flash point of less than 140 degrees Fahrenheit;
- Is a solid and is capable, under standard temperature and pressure, of causing fire through friction, absorption of moisture or spontaneous chemical changes and, when ignited, burns so vigorously that it creates a hazard;

- It is an ignitable compressed gas;
- Is an oxidizer
- Hazardous waste meeting this definition has the alphanumeric code D001. The definition of ignitable waste and test methods to be used can be found in [OAC 3745-51-21](#).



Corrosive Waste:

Generally speaking, a waste exhibits the characteristic of corrosivity if a representative sample of the waste has any of the following characteristics:

- It is aqueous and has a pH less than or equal to two or greater than or equal to 12.5;
- It is a liquid and is capable of corroding steel at a rate greater than 6.35 mm per year
- Hazardous waste meeting this definition has the alphanumeric code D002. The definition of corrosive waste and the test methods to be used can be found in [OAC 3745-51-22](#).



Reactive Waste:

Generally speaking, a waste exhibits the characteristic of reactivity if a representative sample of the waste has any of the following characteristics:

- It is normally unstable and readily undergoes violent change without detonating;
- It reacts violently with water;
- It forms potentially explosive mixtures with water;
- When mixed with water, it generates toxic gases, vapors or fumes sufficient to present a danger to human health or the environment;
- It is a cyanide or sulfide bearing waste which, when exposed to pH conditions between two and 12.5, can generate toxic gases, vapors, or fumes sufficient to present a danger to human health or the environment;
- It is capable of detonation or explosive reaction if it is subjected to a strong initiating source or if heated under confinement;
- It is capable of detonation or explosive decomposition or reaction at standard temperature and pressure;
- It is a "forbidden", "Class A", or "Class B" explosive as defined by the Department of Transportation.
- Hazardous waste meeting this definition has the alphanumeric code D003. The definition of reactive waste and the test methods to use can be found in [OAC 3745-51-23](#)

Toxic Waste:

- Generally speaking, a waste exhibits the characteristic of toxicity if a representative sample of the waste contains any of the contaminants at the specified amounts, listed in [OAC 3745-51-24](#). These contaminants include specific heavy metals such as lead, cadmium, and silver, volatile and semi-volatile organic compounds such as carbon tetrachloride, benzene, trichloroethylene, and cresol, and pesticides and herbicides such as chlordane, endrin, and lindane. Hazardous waste meeting this definition have the alphanumeric codes D004 through D043 depending on the contaminant. The definition of toxic waste and the test method to use can be found in [OAC 3745-51-24](#).



WSU's Hazardous Waste Compliance Strategy:

- As mentioned earlier in this training, Wright State University's Department of Environmental Health and Safety has the responsibility for ensuring the university's compliance with the OEPA hazardous waste regulations. Environmental Health and Safety has a trained staff to make hazardous waste determinations based on information obtained from you, and to ensure all hazardous waste is managed in compliance with applicable regulations. Environmental Health and Safety uses the information required of you in this training program to make decisions on the safe and legal disposition of all unwanted chemical material and to fulfill all necessary recordkeeping and reporting requirements of the Ohio EPA.
- Wright State University, through the Department of Environmental Health and Safety, operates a waste minimization program with the intent of minimizing the amount of hazardous waste requiring disposal. Depending on the nature and condition of the unwanted chemical material generated from your area, it may be introduced into the university chemical redistribution system ([Free Chemicals](#)) or otherwise recycled, commingled with other waste, and/or stored for future disposal. Therefore an unwanted chemical material that you no longer have a need for may not be a waste. It depends on how Environmental Health and Safety decides to manage it.

Your Duties:

- If you are completing this training program you have been identified as someone who has been, or may be, responsible for ensuring the proper disposition of unwanted chemical material from your area, be it a lab, maintenance shop, or other departmental office. Unwanted chemical material includes, but is not limited to, the material listed in the link titled "[What is a Hazardous Waste?](#)"
- **THE UNIVERSITY'S COMPLIANCE WITH THE HAZARDOUS WASTE REGULATIONS BEGINS WITH YOU.** No decision on how to manage an unwanted chemical material can be made by Environmental Health and Safety, or anyone else, unless that material is properly identified and no movement of that material can be performed until it is properly packaged.
- Proper labeling and packaging depends on the type of unwanted chemical material you generate. Environmental Health and Safety has compiled a list of the typical unwanted chemical material generated by the university. [Please review this list](#), and click on the type of material that best describes what you generate and follow the labeling and packaging instructions listed. Only after completing this training, (properly labeling and packaging any material, and completing the personal identification information at the end of this training), will Environmental Health Safety be permitted to pick up the material from your area.

Training Record:

- [OAC 3745-54-16](#) requires records be kept indicating the name and job title of each person who is required to receive this training.
- This training must be completed annually. Environmental Health and Safety will not pick up any unwanted chemical material from you unless records show you have completed this training within one year.





Congratulations!

**You have completed the
Hazardous Waste Training module.**

**Please click the following link to
document your training:**

[Training Certification](#)

Thank you!