



Minimizing Hazardous Waste in Your Laboratory

EPA Compliance Fact Sheet

Vanderbilt Environmental Health and Safety

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CHEMICAL REDISTRIBUTION

VEHS has implemented a Chemical Redistribution Program to redistribute unwanted, useable chemicals from one laboratory to another instead of disposing of them as hazardous waste. Information on obtaining chemicals from the Program, donating chemicals to the Program, and other information about the Program can be found at the VEHS website.

PRODUCT SUBSTITUTION

Laboratories should attempt to substitute non-hazardous or less toxic materials into their processes and experiments whenever possible. One example is the substitution of biodegradable (non-hazardous) scintillation fluids for hazardous scintillation fluids.

INVENTORY MANAGEMENT AND CONTROL

Laboratories should periodically evaluate their chemical inventory and dispose of unwanted/obsolete chemicals. Purchase only the quantity of chemicals required for specific projects. Vanderbilt University has to pay for the disposal of hazardous wastes. Ordering bulk quantities of chemicals to save money may end up costing more money after disposal of the excess quantity.

PROCESS MODIFICATION

To the extent that it does not affect vital research or teaching, laboratories should modify experiments to decrease the quantity of hazardous chemicals used and generated. Microanalysis techniques can greatly reduce the amount of hazardous waste generated.

SEGREGATION AND CHARACTERIZATION

To the extent possible, do not mix wastes or waste streams. In particular, do not mix non-hazardous waste with hazardous waste. Segregation and characterization allows waste to be redistributed for reuse by another researcher. If the waste cannot be redistributed, segregation minimizes disposal costs.

NEUTRALIZATION AND RECLAMATION

Some laboratories generate a simple, pure chemical stream, such as a dilute acid or base that can be rendered non-hazardous by simple neutralization. Other laboratories may generate a dilute aqueous stream that contains a metal that can be easily precipitated, rendering the waste stream non-hazardous. Additionally, reclamation systems are available for some waste streams such as silver recovery systems for photograph fixer solutions. Strict laws apply to processes for neutralizing hazardous wastes. For these types of waste streams, labs are encouraged to contact VEHS to determine if they can process these materials to render them non-hazardous.

GOOD HOUSEKEEPING PRACTICES

Spilled chemicals and the materials used to clean up the spills must be disposed of as hazardous waste. Good housekeeping practices to minimize the likelihood of a spill can reduce the amount of hazardous waste generated.

VEHS Quick Facts:

- Check the Chemical Redistribution Program prior to ordering new chemicals.
- Order only the quantity of chemicals you need.
- Utilize inventory management and control to prevent the build up of waste chemicals.
- Substitute non-hazardous or less hazardous chemicals and/or modify your process to use smaller quantities of hazardous chemicals whenever possible.
- Utilize good housekeeping practices to minimize the risk of a spill.