

Pathology Labs

Best Management Practices For Hazardous Materials/Waste Handling

(Updated July 2016)

Best Management Practices (BMPs) should be thought of as “good housekeeping” procedures. In pathology labs, you may have waste streams regulated as hazardous waste by federal and state laws. Many of these waste streams could be considered nonhazardous if properly recycled instead of disposed of in the trash or down the drain. Listed below are typical waste streams, along with procedures to help you comply with these regulations and help reduce the liabilities associated with noncompliance.

Types of Regulated Waste Streams:

- 1. Laboratory Solvents:** Laboratories use a multitude of solvents when performing analysis. Solvents, such as xylene, methanol, ethanol, etc., are used to dissolve samples and prepare slides. Any waste produced by using these solvents will be hazardous, as many solvents are listed under the Resource Conservation and Recovery Act (RCRA) 268.40. Most other solvents will be hazardous due to their ignitability characteristic, having a flash point of less than 140°F. Containers used to store solvent waste must be in good condition (no severe rusting, apparent structural defects, or deterioration) and not leaking (no visible leaks). Drums should also be Department of Transportation (DOT) approved. Storage containers must be marked with the words “Hazardous Waste,” the date accumulation starts, and a list of the solvents in the order of decreasing amount.

If you produce 30-gallons or more of solvent waste a month, you will be a Small Quantity Generator (SQG). An SQG is defined as a business that generates between 220-2200 lbs of hazardous waste in a given month. 30-gallons of solvent waste should exceed 220 pounds. Once you become an SQG, your business is subject to a higher level of regulation, and an EPA ID# must be obtained. To be in compliance with hazardous waste regulations, the spent solvent needs to be hauled by a licensed hazardous waste hauler to a licensed hazardous waste treatment, storage, and disposal (TSD) facility. Records must be kept on site for all hazardous waste taken from your site for a minimum of three years.

- 2. Formalin or Formaldehyde:** Some wastes are listed as hazardous under RCRA 268.40 due to their known, potentially detrimental, effect to health and the environment. Waste produced when using formaldehyde and formaldehyde mixtures is one such waste having the waste code U122. All formaldehyde waste must be collected and stored in containers that are in good condition (no severe rusting, apparent structural defects or deterioration) and not leaking (no visible leaks). Storage Containers should also be Department of Transportation (DOT) approved. Storage Containers must be marked with the words “Hazardous Waste,” the date accumulation starts, and a list of the contents in the order of decreasing amount. If you produce 26-gallons or more of formaldehyde waste a month, you will be an SQG. 26-gallons of formaldehyde waste exceeds 220 pounds. Once you become an SQG, your business is subject to a higher level of regulation. To be in compliance with hazardous waste regulations, the spent formaldehyde needs to be hauled by a licensed hazardous waste hauler to a licensed hazardous waste TSD facility. Records must be kept on site for all hazardous waste taken from your site for a minimum of three years.

3. **Metal Compounds:** Pathology laboratories use many metal-containing compounds, such as silver nitrate and chromic acid. Any waste produced from the use of compounds containing silver, chromium, arsenic, barium, cadmium, lead, mercury, or selenium are potential hazardous wastes. These wastes should either be disposed of as hazardous or analyzed by an environmental laboratory using the TCLP method. If these substances are deemed hazardous waste, then it is advisable to store each metal in a separate container to avoid any unwanted reactions. Containers should be labeled "Hazardous Waste," with a start accumulation date and a list of contents in decreasing order of amount.
4. **Acids and Bases:** Many different acids and bases are used in laboratories. A waste determination must be made for any waste produced from the use of acids and bases. If the resulting waste has a pH less than or equal to 2.0, or greater than or equal to 12.5, it is considered **corrosive** and must be treated as hazardous. Acids and bases should be stored separately in containers marked "Hazardous Waste" with a start accumulation date.
5. **Disinfectant waste:** Most of the solvent waste generated in pathology labs comes from the disinfectant or cleaning of instruments. Depending on the concentration of the solution you are using, the waste may be hazardous. Reading the Safety Data Sheet (formerly Material Safety Data Sheet) for your disinfectant will determine your disposal method. If the waste is hazardous, it must be captured in a container that is sealed to no evaporation occurs and treated as hazardous waste. **All records for disposal or recycling must be kept on site for three years.**
6. **Fluorescent Bulbs:** Fluorescent bulbs/devices are considered hazardous waste because they contain the heavy metal **mercury**. However, if you recycle under the Universal Waste Regulations, fluorescent bulbs/devices do not qualify as hazardous waste. Please call the Pollution Prevention (P²) Program for a list of fluorescent bulb recyclers and handling instructions. Caution: if a supplier tells you that their bulbs are environmentally safe, remember that they are trying to sell you a product, and that they may not be familiar with the State and Local regulations that pertain to the proper recycling or disposal of these mercury-containing bulbs. **Lamps or devices with any mercury must be recycled following the Universal Waste Regulations or disposed of following hazardous waste regulations.** Please refer to the Management of Spent Mercury-Containing Lamps and Devices handout for further details.

***Safety Data Sheets** are a good start to determine if your waste stream will be hazardous waste. They do have their limitations if they are too vague. The SDS does not take into account what process or system the product may be used in or what your management practices are for preventing cross contamination. Before purchasing any product, request the SDS to see what is in it and to help avoid costs associated with the purchase, use and disposal of the product.

Do Not's

Do not store any materials/waste near storm drains, ditches, creeks, rivers, canals, or any bodies of water that would be contaminated if a spill occurs.

Do not throw away, or send to a bookkeeper, receipts that show proper disposal of waste materials. They are required to remain on site for a minimum of three years. This includes contracts with hazardous waste haulers.

Do not take the word of any sales person who will not supply the SDS for the product he/she is selling. Some will say that the material is biodegradable or environmentally friendly, but the process that you use the material in may contaminate the product and cause it all to be regulated (i.e., equipment degreasing and rinsing).

Do not dispose of any material into your septic system, sanitary sewer, or storm sewer. If you want to do this you must have written permission from the regulatory agency that permits that particular system. For Septic Systems this is the Department of Health; for Sanitary Sewers it is the local utility district in which your facility is located.

Do not store hazardous waste out of containment areas. Make sure all containers are properly labeled (include dates where necessary).

Do not hesitate to ask questions when it comes to managing your hazardous waste streams.

If you have any questions, please call the Division of Natural Resources Management, Pollution Prevention (P²) Program at (239) 533-8821.