



Identifying Hazardous Waste In Your Laboratory

EPA Compliance Fact Sheet: Revision 1

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IDENTIFYING HAZARDOUS WASTES IN YOUR LAB

Laboratory personnel should treat all waste chemical solids, liquids, or containerized gases as hazardous wastes unless a specific chemical waste has been confirmed to be a non-hazardous waste by VEHS. A laboratory chemical becomes a “waste” when you no longer intend to use it, regardless of whether or not it has been used or contaminated. Also, spilled chemicals and absorbent materials used to clean the spill should be disposed of as hazardous waste. Please note that the term “chemical” includes items containing chemicals such as ethidium bromide gels, paints, solvents, degreasers, glues, varnishes, and disinfectants, in addition to stock chemicals and chemical solutions used in laboratory processes.

VEHS Quick Facts:

- Treat all waste chemical solids, liquids, and containerized gases as hazardous waste.
- Acute hazardous wastes are F-, K-, and P-listed hazardous wastes.

ADDITIONAL INFORMATION ON THE DEFINITION OF HAZARDOUS WASTE

To ensure consistency with the hazardous waste determination process, laboratories should treat all waste chemicals as hazardous waste and allow VEHS to make the final determination as stated above. However, a more complete description of the hazardous waste determination process is provided here for informational purposes.

Hazardous wastes are defined by the United States Environmental Protection Agency (USEPA) as waste solids, liquids, or containerized gases that meet the definition of a **characteristic** or **listed** hazardous waste. Each hazardous waste type is described in detail below.

CHARACTERISTIC HAZARDOUS WASTES

Waste solids, liquids, or containerized gases that exhibit any of the following characteristics are defined as characteristic hazardous wastes: 1) Ignitability; 2) Corrosivity; 3) Reactivity; or 4) Toxicity.

LISTED HAZARDOUS WASTES

The USEPA has already predetermined that certain wastes are hazardous and these hazardous wastes have been incorporated into published lists. The hazardous waste lists are included on the VEHS website.

K-Listed Hazardous Wastes: K-listed hazardous wastes are source-specific wastes that are generated by specific industries such as iron and steel production facilities. K-listed hazardous wastes are not likely to be found in a laboratory.

F-Listed Hazardous Wastes: F-listed hazardous wastes are non-specific source wastes that are generated by particular industrial processes that can occur in various industries. Industrial processes that generate F-listed hazardous wastes include wood preservation, electroplating and other metal finishing processes, and processes that generate waste solvents.

P- and U-Listed Hazardous Wastes: The P- and U-listed hazardous wastes are pure and commercial grade formulations of specific unused chemicals that are considered wastes. Unused chemicals may be considered wastes because they are no longer needed, they are spilled, or they are off-specification.

Acute Hazardous Wastes

Certain listed hazardous wastes are considered to be acutely toxic to human health and the environment and are further defined as “acute hazardous wastes.” Acute hazardous wastes include F-, K-, and P-listed hazardous wastes described above.

Listed Hazardous Wastes in Laboratories

F-, P-, and U-listed hazardous wastes are the most likely listed hazardous wastes to be found in laboratories. F-listed hazardous wastes may be found in laboratories where electroplating or metal finishing operations are conducted that utilize solutions containing cyanides. Other F-listed wastes that may be found in laboratories include the following solvents or mixtures containing 10 percent or more of the solvent (before use) when spent:

Tetrachloroethylene	Trichloroethylene	1,1,1-trichloroethane	1,1,2-trichloroethane	Chlorinated fluorocarbons
Ortho-dichlorobenzene	Trichlorofluoromethane	Methylene chloride	Carbon tetrachloride	Cresols
2-nitropropane	Cresylic acid	Nitrobenzene	Toluene	Methyl ethyl ketone
Carbon disulfide	Isobutanol	Pyridine	Benzene	2-ethoxyethanol
Xylene	Acetone	Ethyl acetate	Ethyl benzene	Ethyl ether
Methyl isobutyl ketone	n-Butyl alcohol	Cyclohexanone	Methanol	

There are over 300 U-listed hazardous wastes. Please see the VEHS website for the complete list. The U-listed hazardous wastes most commonly found in laboratories include the following:

Acetaldehyde	Ethanol	2-Propanone	Acetone	Acetonitrile
Acetophenone	Acrylamide	Acrylonitrile	Aniline	Benzene
1-Butanol	Chlorobenzene	Chloroform	o-Chlorophenol	Cresol
Cyclohexane	Cyclohexanone	o-Dichlorobenzene	Ethylene dichloride	1,2-Dichloroethylene
Methylene chloride	2,4-Dichlorophenol	1,4-Dioxane	Ethyl acetate	Ethyl ether
Trichloromonofluoromethane	Formaldehyde	Formic acid	Hydrazine	Isobutyl alcohol
Lead acetate	Mercury	Methanol	Methyl ethyl ketone	Methyl isobutyl ketone
Methyl ethyl ketone peroxide	Methyl methacrylate	Naphthalene	Phenol	Resorcinol
1,1,1,2-Tetrachloroethane	1,1,2,2-Tetrachloroethane	Tetrachloroethylene	Carbon tetrachloride	Tetrahydrofuran
Thallium acetate	Thiourea	Toluene	Methyl chloroform	Trichloroethylene

There are over 100 P-listed hazardous wastes. Please see the VEHS website for the complete list. The P-listed hazardous wastes most commonly found in laboratories include the following:

Acrolein	Allyl alcohol	Arsenic acid	Brucine	Carbon disulfide
Chloroacetaldehyde	Chloroaniline	Cyanides	Diisopropylfluorophosphate	2,4-Dinitrophenol
p-Nitroaniline	Phosgene	Potassium cyanide	Sodium azide	Sodium cyanide
Thallium oxide	Ammonium vanadate	Vanadium pentoxide		