



AUBURN UNIVERSITY

RISK MANAGEMENT &amp; SAFETY

## Pharmaceutical Wastes

There are many chemical and/or pharmaceutical compounds used in research or in the treatment of diseases that are also considered by the EPA to be hazardous wastes when disposed of. Listed below are some common materials found at Auburn University.

**NOTE:** This list is provided as a guide only and is by no means all-inclusive. Contact EH&S for guidance if you have questions about a particular pharmaceutical.

### Antineoplastics

The 7 drugs listed below are regulated as hazardous waste for the purpose of disposal. This includes out-of-date and unused materials. Any of these materials in liquid or solid form must be collected by EH&S for disposal. They cannot be placed in biological waste containers (red bags or boxes), poured down the drain or placed in the regular trash. Sharps, pipette tips, tubing, gloves, wipes and any other items contaminated with these materials should be disposed of as biological waste.

Chlorambucil (Leukeran)  
Melphalan (Alkeran)  
Uracil Mustard  
Mitomycin (Mutamycin)  
Cyclophosphamide (Cytosan, Neosar, Procytox)  
Streptozocin (Zanosar)  
Daurubicin (Cerubidine)

### Commonly Used Medicinal Products

These products, for disposal purposes, are also regulated as hazardous wastes and are commonly found in medical use or research.

Diethylstilbestrol	Epinephrine
Hexachlorophene	Nicotine
Nitroglycerine	Phenacetin
Resorcinol	Reserpine
Saccharin	

**Heavy Metals**

**Arsenic, Lead and Cadmium compounds** are commonly used in veterinary medicine. **Barium** (Barium Sulfate) is used as an x-ray contrast medium. **Chromium** is found in many nutritional supplements. **Mercury** is found in preservatives (Thimerosal), thermometers, sphygmomanometers and antiseptics (Mercurochrome). **Selenium** is found in ointments (selenium sulfide), shampoos and nutritional supplements. **Silver** can be found in burn ointments (Silvadene), styptic sticks (silver nitrate) and some antiseptics.

Minute quantities of these metals can make your waste a hazardous waste. The regulatory limits are 0.2 mg/l for mercury, 1.0mg/l for selenium and cadmium, 5.0 mg/l for lead, chromium, silver and arsenic and 100 mg/l for barium.

**Other EPA Regulated Chemicals with Medicinal Uses**

The following is a list of regulated compounds that may have medicinal, pharmacological, research or other similar uses.

<b><u>Chemical</u></b>	<b><u>Use</u></b>
Acetone	pharmaceutic aid (solvent)
Acetyl Chloride	testing for cholesterol
Acrylonitrile	used in pharmaceutical mfg.
Aniline	used in pharmaceutical mfg.
Azaserine	antifungal, antineoplastic
3- Benzyl Chloride	used in pharmaceutical mfg.
Bromoform	sedative, hypnotic, antitussive
Cacodylic Acid	dermatologic
Carbon Tetrachloride	anthelmintic, phamaceutic aid (solvent)
Chloral	mfg. of chloral hydrate
Chlornaphazin	antineoplastic
p-Chloro-m-cresol	antiseptic
2-Chloroethyl vinyl ether	mfg of anesthetics and sedatives
Chloroform	anesthetic
Creosote	antiseptic, expectorant
Cresol	antiseptic, disinfectant
Chloropropionitrile	used in pharmaceutical synthesis
Dichlorobenzene	germicide, used in pharmaceutical mfg
Diisopropylfluorophosphate	cholinesterase deactivator
Dimethylamine	used in pharmaceutical mfg.
Dimethylphenethylamine	adrenergic
Ethyl Acetate	pharmaceutic aid (flavoring agent)
Ethyl Carbamate	antineoplastic
Ethylene Oxide	surgical instrument sterilizer
Ethyl Ether	disinfectant, anesthetic
Formaldehyde	antiseptic, disinfectant, preservative
Hexachloroethane	anthelmintic

Lindane	scabicide
Maleic Anhydride	mfg of pharmaceuticals
Methanol	solvent used in the mfg. of pharmaceuticals
Methapyrilene	antihistaminic
3-Methylcholanthrene	used experimentally in cancer research
Methylthiouracil	thyroid inhibitor
Naphthlale	antiseptic, anthelmintic
Paraldehyde	sedative, hypnotic, controlled substance
Phenol	antiseptic, anesthetic, antipruritic
Sodium Diethyl dithiocarbamate	Ni/Cd poisoning antidote
Physostigmine Salicylate	cholinergic
Physostigmine	cholinergic
Potassium Silver Cyanide	bactericide
Strychnine	veterinary tonic and stimulant
Tetrachloroethylene	anthelmintic
Trichloroethylene	inhalation anesthetic, mfg. of pharmaceuticals
Thiram	antiseptic
Warfarin	anticoagulant

Please remember that this list is not all-inclusive; there are many regulated wastes not on this page. Contact EH&S for guidance if you have questions about a particular pharmaceutical.