

Rowan University laboratory drains at the Glassboro and South Jersey Technology Park Campuses are connected to the local municipal sewer system. Wastewater is transferred through a network of conveyance pipelines to the Gloucester County Utilities Authority (GCUA), where it is treated through biological processes. The treated water is then ultimately discharged to the Delaware River. Rowan University as well as the GCUA have strict rules restricting what can be discharged to the sanitary sewer system. Table 1 contains a list of prohibited chemicals and substances identified by the GCUA.

Laboratory Safety provides disposal services for nearly every form of chemical waste generated in academic and research laboratories. Many chemicals while technically non-hazardous, still pose serious environmental and human health hazards if disposed of improperly. Therefore, laboratories looking to dispose of even non-hazardous waste chemicals are strongly encouraged to utilize the University's disposal services. If you have any questions or concerns regarding how to manage a waste, please contact Laboratory Safety at 856-256-5105 or [LabSafety@Rowan.edu](mailto:LabSafety@Rowan.edu).

**Table 1: The following chemicals, substances, and conditions are PROHIBITED by the GCUA and or Federal Law for sewer disposal:**

Alcohols	Chromium or Chromium Compounds	Nickel and Nickel Compounds
Aldehydes	Copper and Copper Salts	Pesticides
Arsenic	Creosol	Silver and Silver Compounds
Arsenicals	Cyanide or Cyanide Compounds	Sulfonamide
Bromine	Fluorine	Toxic Dyes (Organic or Mineral)
Chlorinated Hydrocarbons	Iodine	Zinc and Zinc Compounds
Compounds with Chlorine demands > 100 ppm	Mercury or Mercury Compounds	Heavy Metals
All strong oxidizing agents such as Peroxides, Chromates, Dichromates, Permanganates, etc.	Compounds producing Hydrogen Sulfide or any other toxic, flammable, or explosive gases, either upon acidification, alkalization, reduction, or oxidation.	Strong reducing agents such as Nitrates, Sulfites, and Sulfides.
		Strong Acids (pH <5.5), and Strong Bases (pH >9.5).
Any waste containing Phenols, noxious or malodorous solids, liquids, or gases, which either singly or by interaction with other wastes, can create a public nuisance or hazard to life or are or may be sufficient to prevent entry into a sewer for its maintenance and repair.		
Unusual concentrations of inert suspended solids (such as, but not limited to, Fuller's earth, lime slurries and lime residues) or of dissolved solids (such as, but not limited to, sodium chloride and sodium sulfate).		
Excessive discoloration (such as, but not limited to, dye solutions) which cannot be removed by the wastewater treatment plant.		
Unusual Biological Oxygen Demand (BOD), Chemical Oxygen Demand (COD), or Chlorine requirements in such quantities as to constitute an unacceptable load or interference on the GCUA wastewater collection and treatment system.		
Any unusual volume of flow or concentration of wastes constituting a "slug" of such volume or strength to cause a treatment process upset and subsequent loss of treatment efficiency.		

### **Safe Drain Disposal of Chemicals:**

Small quantities (500ml or less at a time) of certain Non-Hazardous chemical solutions are permitted to be disposed of through laboratory drains. These chemicals can be found listed in Table 2 of this document. If you have a chemical that is not listed in Table 2 but you believe is acceptable for drain disposal, you must first obtain approval from Laboratory Safety. If you have quantities greater than 500ml of any of the approved non-hazardous chemicals in Table 2, they need to be given to Laboratory Safety for disposal. **Under no circumstance is any quantity of an EPA Listed or Characteristic Hazardous Waste permitted to enter a laboratory drain.**

The overall quantity of a waste chemical should be limited to a few hundred milliliters per discharge. Solids should not be poured into drains as they can result in clogging.

1. Run the tap for several seconds to start the flow of water in the plumbing.
2. Slowly pour the waste chemical into the drain while the water continues to run to dilute the solution as it is carried away.
3. After all the waste is poured, allow the water to continue to run to flush the chemical from the plumbing. Run the water long enough to ensure that the trap under the sink contains only clean water.

### **Disposal of Acid and Base Waste Solutions:**

Acid or Base solutions which have been rendered neutral through elementary neutralization may be disposed of via laboratory drains. The pH of any acid or base solution entering a drain must be greater than 5.5 and less than 9.5 per the GCUA. Each container of waste solution must be tested to verify correct pH before it can be disposed of. The resulting neutralized solution may only be comprised of water and non-hazardous salts/non-hazardous chemicals suitable for drain disposal.

- Drain disposal is prohibited for acid or base solutions containing any [RCRA Listed or Characteristic Waste](#).
- Hydrofluoric Acid (**HF**) is prohibited from elementary neutralization and drain disposal. The neutralization process is dangerous to personnel and the salts generated are toxic.

### **Building Elementary Neutralization Systems:**

Certain laboratory buildings on the Glassboro Campus are equipped with elementary neutralization tanks (also known as Acid or Base Neutralization Systems). Wastewater from laboratory drains enters these tanks prior to being discharged to the municipal sewer system. These tanks are a safety measure to help ensure that our wastewater pH does not exceed the limits. Regardless of whether your building has an elementary neutralization tank, never dispose of acid or base wastes with a pH <5.5 or >9.5 down a drain.

- **These elementary neutralization tanks are not in place to allow for the intentional disposal of concentrated acid or base solutions.**
- **These systems DO NOT remove or filter chemicals from laboratory wastewater.**

**Table 2: Common Non-Hazardous Chemicals that may be drain disposed in limited quantities of 500ml or less.**

Acetylsalicylic acid (aspirin)	Corn syrup	Magnesium sulfate (Epsom salt)	Sodium chloride
Alanine	Cysteine	Maltose	Sodium citrate
Alum (Sodium aluminum sulfate)	Dextrin	Nicotinic acid (niacin)	Sodium dihydrogen phosphate
Ammonium alum (Ammonium aluminum sulfate)	Fructose	Pantothenic acid	Sodium hypochlorite
Arabinose	Galactose	phosphate	Sodium mono-hydrogen
Borax (sodium tetra-Borate decahydrate)	Gelatin	Potassium aluminum sulfate (potassium alum)	Sodium nitrate
Boric acid	Glucose	Potassium bitartrate	Sodium potassium tartrate
Calcium chloride	Glycine	Pyridoxine (Vitamin B6)	Sodium silicate
Calcium phosphate, monobasic	Histidine	Riboflavin (Vitamin B2)	Sodium sulfate
Calcium superphosphate	Inositol	Serine	Sucrose
Calcium triple superphosphate	L(+)-Ascorbic acid (Vitamin C)	Sodium bicarbonate	Thiamine (Vitamin B1)
Casein	Lactose	Sodium bisulfate	Tryptophan
Choline	Leucine	Sodium bitartrate	Tyrosine
Citric acid	Lysine	Sodium carboxy-methylcellulose	Urea

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