

Summary of Guidelines for Drain Disposal of Chemicals

Introduction

Disposal of chemicals into the sanitary sewer is regulated by federal and state laws and regulations, by East Bay Municipal Utility District (EBMUD) Ordinance, and by the EBMUD Wastewater Discharge Permit issued to UC Berkeley. These laws and regulations prohibit any drain disposal of hazardous waste and limit the allowable discharge concentration of a number of specific substances. EBMUD regularly monitors campus wastewater for violations of discharge limits. Failure to comply with wastewater discharge limits could lead to fines of up to \$25,000 per day and/or restrictions in laboratory water use.

The range of substances that can be considered hazardous is enormous. Indeed, almost any substance is a hazardous waste if it is disposed of in large quantities or in high concentrations. Hazardous wastes produced on campus are disposed of through the Office of Environment, Health & Safety (EH&S).

Overview

Campus laboratory drain systems are connected to the campus sanitary sewer system, which in turn drains to the City of Berkeley sewer system and then to the EBMUD water pollution control plant for treatment and discharge to San Francisco Bay. Chemicals may be prohibited from drain disposal if they:

Potential Problems at EBMUD Water Pollution Control Plant

- (1) harm the biological processes of sewage treatment at the EBMUD plant
- (2) are not digested in the sewage treatment process, but pass through treatment and are released as pollutants to the air or are released to San Francisco Bay where they are toxic to aquatic organisms
- (3) can concentrate in the sewage treatment sludge, compromising EBMUD's ability to use the sludge for beneficial purposes (such as a fertilizer)

Potential Problems in Laboratory Sinks and Campus Sewers

- (4) create hazards of fire or explosion
- (5) can react with other chemicals in waste water to form hazardous gases
- (6) can corrode laboratory and building plumbing
- (7) can leak out of old pipes as liquid to pollute campus grounds
- (8) can escape from sewer pipes as air pollutants

- (9) can expose plumbers to contact or inhalation hazards

Classification as Hazardous Wastes

- (10) are classified as hazardous wastes

All hazardous wastes are prohibited from discharge into campus drains. Wastes are considered hazardous if they exhibit any of the following characteristics:

- corrosivity
- reactivity
- ignitability
- moderate or high toxicity

General Rules

At UC Berkeley, drain disposal of chemicals is limited to occasional disposal of small amounts of chemicals. Large-scale or continuous disposal of any chemical is permitted only with the written approval of the Hazardous Waste Management Committee. (EH&S should be contacted to obtain this approval.) The following general rules apply to drain disposal of chemicals on campus:

- (1) Only water-soluble substances can be disposed of in the sink. Only dilute solutions of water-soluble flammable solvents that do not pose a fire hazard can be flushed down the drain to ensure complete transfer to the sewer.
- (2) Acids and bases must be in the pH 5-10 range if they are to be discharged into the sewer system.
- (3) Moderately or highly toxic, malodorous, or lachrymatory (irritating to the eyes) chemicals must not be disposed of down the drain.

Specific Guidelines

Detailed guidance on drain disposal of chemicals is available in the Campus Drain Disposal Guidelines (<http://www.ehs.berkeley.edu/pubs/guidelines/draindispgls.html>). The Guidelines divide chemicals into three groups with regard to drain disposal:

Class A. Chemicals of little or no hazard in dilute aqueous solution.

These solutions are suitable for disposal down the drain in quantities of up to about 100 grams (g) or milliliters (ml) of solute per laboratory per day. Class A chemicals include many simple organic and inorganic compounds, as well as common inorganic chemicals. This includes most normal biological metabolites and nontoxic cellular constituents (proteins, nucleic acids, carbohydrates, soluble fats, simple alcohols, and their precursors and catabolites).

Class B. Chemicals of moderate hazard in dilute aqueous solution.

These solutions are suitable for drain disposal with excess water in quantities no greater than 1 g or ml of solute per laboratory per day. Class B chemicals include all of those listed as toxic (T) in the California Code of Regulations Section 22-66261.30 et seq. that are water soluble, except for those listed as Class A chemicals or Class C chemicals.

Class C. Chemicals that may not be drain disposed in any amount except by written approval of the Hazardous Waste Management Committee.



Class C chemicals include all chemicals that are not water soluble; chemicals that cause unacceptable concentrations of offensive, toxic, or explosive vapors; and chemicals that are toxic or reactive at concentrations below 1 part per million (ppm) in aqueous solution.

Resources

See also:

Campus Policy (Drain Disposal Policy, October 1, 1990)

(<http://www.ehs.berkeley.edu/policy/policies/draindisppolicy.html>)

Campus Slug Discharge Prevention Program

(<http://www.ehs.berkeley.edu/pubs/factsheets/53wastewater.html>)

Chemical Waste Management Webpage

(<http://www.ehs.berkeley.edu/whatwedo/hazmat/chemwaste.html>)

Please call EH&S at 642-3073 if you have further questions.

