

Virginia Commonwealth University
Office of Environmental Health & Safety
Chemical/Biological Safety Section

Reactive Chemical Management

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The management of hazardous wastes at Virginia Commonwealth University (VCU) falls to the Office of Environmental Health and Safety (OEHS). Specifically, routine quantities and categories of waste are managed weekly. Laboratory cleanouts, management of special wastes, and management of highly reactive chemicals are not considered “routine” as defined on the OEHS website (Section XI, <http://www.vcu.edu/oehs/chemical/chemwastemanagement.pdf>) and the cost of disposal will be charged back to the generating department. Reactive chemicals will be managed on a case-by-case basis but expired ethers and crystallized picric acid, which if disposed of in a timely fashion would not be reactive, will always be treated as non-routine.

Hazardous waste disposal funding provided to OEHS is for *routine* chemical wastes only; therefore, special wastes or those which have been allowed to become reactive or dangerous with greatly increased disposal costs are not included in the ongoing waste disposal program. Routine chemical waste disposal can be defined as reasonable amounts of “normal” chemical waste (20 liters or less per week per activity) which are transferred into the hazardous waste management system (see OEHS website) weekly or as they are generated. Materials allowed to accumulate, laboratory clean outs, large volume waste appointments, and disposal of “shock” sensitive or reactive chemicals are not included, and the laboratory and/or their department are responsible for paying for such disposal activities. A reactive or shock sensitive chemical is one which typically has a finite shelf life and when allowed to remain in the laboratory beyond this expiration can become highly reactive or explosive. Examples include; ethyl ether, when retained beyond its expiration date forming peroxide compounds which can detonate, and liquid picric acid, which has been allowed to crystallize and is considered an explosive. Under federal law, VCU’s chemical waste disposal contractors cannot accept such materials until they are stabilized. Stabilization is expensive and must be performed by skilled technicians. These materials may also represent a potential hazard to VCU employees should they be improperly handled.

Researchers or other members of the university must dispose of potentially reactive materials through OEHS prior to their expiration date and prior to them becoming reactive. When shock sensitive materials are found, the laboratory must immediately contact OEHS for assistance. In concert with the university’s hazardous waste contractors, a determination will be made regarding the safety of the material and if stabilization is necessary. Should stabilization be necessary, the generating department will be asked to provide a funding code, purchase order, or other fund transfer mechanism to cover management costs. Stabilization of a single item can cost several thousand dollars due to labor, travel, mobilization, and equipment costs. These costs can be avoided by properly managing potentially reactive materials and establishing/ observing inventory control and material quality assurance procedures.