



## Re-Evaluating Hazardous Materials Inventories at Your University

In light of the EPA's higher education enforcement initiative, it might be a good time to dust off old inventories in preparation for visitors. Can your researchers and science faculty ensure a timely use for all their hazardous chemical stock? A regulator could argue that any unusable hazardous chemicals are waste and cite the generator for "failure to make a hazardous waste determination" (40 CFR 262.11). Also, if the chemical's condition has deteriorated to the point that it "presents an imminent and substantial endangerment to health and the environment" [§7003 of the Resource Conservation and Recovery Act (RCRA)], this could result in the issuance of an Emergency Compliance Order. Several universities have discovered how costly RCRA violations can be.

Though proper storage and management of hazardous chemical inventories at state institutions can be an area that slips through holes in regulatory jurisdictions, close scrutiny might uncover several mechanisms for issuing compliance orders. All hazardous-waste generators are responsible for making hazardous-waste determinations. Keeping off-spec and unusable chemicals on the shelf could lead to a compliance order (regardless of generator status) for failing to make this determination – especially if the chemicals have deteriorated to a state where they exhibit the RCRA characteristic of reactivity.

Most safety professionals at universities know how difficult it is to control chemical inventories at their institutions. Some universities have taken drastic measures in an effort to maintain hazardous materials inventories for reporting purposes. Still other institutions are exempt from OSHA reporting requirements – giving them even less leverage in the administrative battle for funding and support in these efforts. With the threat of EPA fines as the new ammunition, perhaps it is time to re-engage the enemy called indifference.

If your institution does not have a comprehensive chemical inventory management program, the implementation of such a program is well worth the effort. A good inspection of old stock might uncover some potentially dangerous conditions. The Colorado Department of Public Health & Environment's (CDPHE) Hazardous Materials and Waste Management Division (HMWMD) has assisted four Colorado high schools, three middle schools and one elementary school in removing unstable chemicals from their science labs in past years. The discovery of explosive substances has led to concern on the part of both regulators and emergency-response agencies assisting in the process. Similar conditions exist in some institutions of higher education.

One such institution was the University of Northern Colorado (UNC), which decided to reduce its chemical inventory and remove obsolete, outdated and off-specification chemicals. The process led to a cooperative effort by UNC, the State Hazardous Materials and Waste Management Division, the Greeley Police's Bomb Unit and two local fire departments. Of the over 3,600 chemical containers identified for disposal, several were reactive substances that were not safe to transport or that presented regulatory restrictions to transportation. These were removed from storage by the bomb unit and then transported to a remote location, where they were detonated. Only one emergency permit was issued. Since this was a self-initiated process, no violations were issued. Had a state or federal representative discovered the unstable, outdated or improperly managed off-specification chemicals, the outcome might have been much less positive.

Though there was a mechanism in place to allow the bomb unit to charge the university, they handled the matter as a training exercise. The only costs to UNC were a minimal fee for the emergency permit and the costs to dispose of the excess inventory as hazardous waste (still less than the maximum cost of \$27,500 for just one day of an EPA-RCRA violation). However, there could have been other



expenses. Some regulatory agencies can charge by the hour for assistance. Standby emergency services such as an ambulance, a Flight for Life helicopter or a hazardous materials response team can bill as well.

Colorado's hazardous-waste inspectors are trained to identify potentially unsafe storage conditions of outdated chemicals. It is not enough to employ safe practices; universities should be able to demonstrate that these practices are working. Institutions should have well-defined chemical management programs, such as solvent and ether management plans. Without a well-identified program, items such as amber-colored perchloric acid containers (that do not permit inspection of the content conditions) become automatically suspect. The same applies to peroxide formers in the absence of a label (for other recording method) indicating the date purchased, opened, and when stabilizers were added. Colorado's Department of Public Health and Environment's Hazardous Materials and Waste Management Division has compiled a list of commonly found explosive and shock-sensitive materials; a list of chemicals found to be a problem in schools; and recommended procedures for conducting a chemical inventory safely. For copies of this information, contact Colorado's HMWMD's public assistance line at (303) 692-3320. Please share this information with your local school administrators and chemistry teachers.

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