

Safety Notice - Lessons Learned from Lab Incident

Waste Container Explosion

February 11, 2009

Incident Description

Recently a hazardous waste container in an academic laboratory exploded inside a corrosives storage cabinet. No one was injured in the incident but the use of a building was lost for approximately 24 hours for clean-up activities and an odor associated with the acids involved in the incident. The resulting clean-up required was significant as several other waste containers in the storage cabinet broke during the explosion and their contents spread throughout the laboratory. The pictures below are an indication of the force involved from an explosion of heavy walled glass acid bottles.



Potential Causes of the Incident

Investigation identified that incompatible materials were placed in at least one of the acid hazardous waste containers within the corrosives storage cabinet. The type of container used was a heavy walled 2.5 liter glass bottle designed for storage of concentrated mineral acids. This type of container is not designed with pressure relief or to fracture in such a way as to minimize damage when rupturing.

A contributing factor to the complexity of resolving this incident and returning the building to full operation was that the laboratory did not have a current EH&S Laboratory Safety Registration. This registration would have made a chemical inventory readily available and provided emergency contact information. It would have also given EH&S an opportunity to verify training requirements are being met by laboratory personnel.

Lessons Learned

1. Register all laboratories with EH&S in order to ensure a chemical inventory and related emergency contact information is readily available during an emergency. For information please see http://uabf.asu.edu/ehs_labsafety.
2. Verify that all personnel involved in placing hazardous waste into hazardous waste containers have completed Hazardous Waste Management Training. This training is available on Blackboard. For information please see http://uabf.asu.edu/ehs_training.
3. Verify that all waste chemicals placed in storage containers are compatible and do not use heavy walled glass containers for storage of waste acids or peroxides. Containers designed to relieve pressure that may develop due to decomposition of acids and peroxides must be used. The container recommended by EH&S for acid wastes is available from Lab Stores. If you are in doubt about the type of container you are using for hazardous waste storage please contact EH&S at (480) 965-1823 or EHS@asu.edu.