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Office of Environmental Health and Safety

INCIDENT INVESTIGATION REPORT

Summary

Date: 10-18-08; 12:01 a.m. Location: SE Bldg, room/lab 120
Incident description: Explosion due to pressure build-up in complex reaction waste bottle.
Injuries: No injuries; minor property damage; no fire.
Information compiled by: R. Kevin Creed, Director EH&S; Donna Jaramillo-Fellin, College of Natural Sciences

Incident Description

A 4 liter glass bottle with a complex mixture of waste solution from an oscillating reaction exploded 11 days after it was capped. The name of this oscillating reaction is: Briggs-Rauscher reaction. The bottle was only 2/3 full. It is hypothesized that the waste solution, which contained hydrogen peroxide, continued to evolve oxygen even though it was left open several hours after the last addition.

There were no injuries; no individuals were in the immediate area at the time.

Incident Causation and Corrective Actions

It is hypothesized that the waste solution continued to evolve oxygen in the capped bottle and after 11 days the pressure was sufficient to exceed the strength of the glass.

The instructional lab coordinator is exploring possible means to chemically ensure that any residual hydrogen peroxide is completely consumed or degraded.

EH&S is going to implement a practice of supplying plastic bottle caddies for reactive waste solutions and organic solvent waste containers. In addition, EH&S will purchase/develop color coded labels to augment the waste labels and thus make the distinction between incompatible waste containers more evident.

It is recommended that hazardous waste handling personnel and laboratory safety personnel communicate to the appropriate lab users the potential for this type of accident involving this type of waste stream.

11-13-08