



RISK MANAGEMENT & SAFETY

SAFETY ALERT

Waste Acid Bottle Explosion

Event: April 18, 2016
Category: Chemical Incident
RMS Contact: Lisa Phillips, Bognar.6@nd.edu

Contact RMS:

Tel: 1-5037

Description

An explosion occurred when a waste nitric acid bottle became over-pressurized after a delayed chemical reaction. The bottle was stored in a cabinet under a hood with other waste containers that were destroyed in the explosion. The laboratory was unoccupied at the time.



Findings

- The acid waste bottle contained nitric acid used to clean glassware.
- Ten waste bottles containing various metals in acid or methylene chloride were destroyed.
- Graduate student noticed pressure release when the bottle was last opened ~ one month earlier.
- The bottle was not sent for disposal because it was not full.

Causes

- Waste bottle was tightly recapped following the observation of pressurization.
- Potential chemical reactions resulting from the mixing of incompatible waste streams not fully communicated.
- Absence of a regular laboratory waste disposal schedule.

Recommended Actions

- Purchase vented caps and teach students how/when to use them on waste containers.
- Develop schedule to have wastes disposed routinely through RMS.
- Review proper glassware cleaning techniques to remove metals and other contaminants to prevent cross contamination of waste.
- Conduct risk assessment on lab tasks and develop or enhance procedures as appropriate.

Remember, if you are uncertain about a reaction or experimental set-up, consult with someone more experienced.

Video Resource for Nitric Acid Waste Generators:

[Nitric Acid Wastes: Preventing Chemical Incompatibility Hazards](#) (With permission of Northwestern University)