

INCIDENT – WASTE CONTAINER RUPTURE

While a lab was unoccupied, an aluminum diethyl ether bottle being re-used as a chemical waste container ruptured, releasing its contents and leaving a white, odorless solid residue. No one was injured or exposed to the contents of the container. The container was stored in the Satellite Accumulation Area and collected waste for nearly two months before the incident occurred.

Following the discovery of the incident, the lab analyzed the residue found in the container, which was primarily composed of aluminum hydroxide.

Though it is unknown exactly what chemical reaction led to the rupture, the leading hypothesis is that bromo-alkanes in the waste reacted with the aluminum container leading to corrosion, pressure buildup, and eventually rupture. **Chemical waste is just as reactive in a waste container as it is in the original bottle.**

LESSONS LEARNED

- Always check the compatibility of different waste materials with each other and with the material of the container. Much of this information can be found on the chemical's safety data sheet (SDS) while more general information can be found on this [waste compatibility chart](#).
- Ensure that all waste containers are suitable for storing that waste. Do not use chemical bottles that contained reactive chemicals such as nitric acid as waste containers.

Contact Dr. Dan Kuespert, Laboratory Safety Advocate,
at 410-516-5525 or dkuespert@jhu.edu for
more information about this JHU Safety Note.

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- Label chemical waste with the full chemical name and the names of all other products that may be present in the waste even if in trace amounts. Provide percent composition as accurately as it is known.

DISCUSSION QUESTIONS

- How could we have an unintended chemical reaction in our chemical waste containers? What practices would help us avoid that situation?
- How can we ensure that all chemicals being disposed of are compatible with each other and the material of the container itself?
- What are our lab's emergency plans in case of an incident like this one?

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