



The University of Akron  
College of Polymer Science  
and Polymer Engineering

Office of Operations - Safety Office

# LESSONS LEARNED

## April 2019 - Chemical Waste Fire

**What Happened?** *Understanding what to do in an emergency significantly reduced damage to the lab.*

Researchers were eating lunch when this incident occurred and no one was working in the lab. The fire was discovered after the research group members noticed a burning smell coming from the lab. When they opened the door to the lab the 4L bottle of waste was on fire. (identical to the one in the picture with the red cap). Researchers reacted as they were trained during the emergency scenarios safety focus. One used the emergency red phone, one pulled the fire alarm pull station and one grabbed a fire extinguisher and put the fire out. Training helped reduce the damages and saved research.

**Great team effort to significantly reduce further damage in the lab.**



### What was the cause?

The investigation of the fire proves the chemical waste self-ignited after a metal catalyst was discarded into the waste container with other materials present. The catalyst was not quenched completely.

### What went wrong?

- Metal catalyst was not quenched completely. (This was a routine action for the researcher, but accidents happen)
- The waste containers were being used on the bench instead of inside the hood.
- No waste documentation for those 2 waste containers.

### What went right?

- Researchers knew exactly what to do in case of emergency and worked as a team.
- Research group did participate in the lab emergencies safety focus in which they learned what to do in an emergency.
- Researcher was quickly helped by another researcher.
- University of Akron Health and Safety was contacted immediately.
- One researcher knew how to use the extinguisher enough to extinguish the fire.
- The building was evacuated, and the researchers were there to meet safety.
- There are procedures for quenching the metal catalyst and the researcher was trained.
- Bench areas were not cluttered and therefore did not add fuel or more ignition sources to the fire. Flammable are stored appropriately. (This is why we keep labs clean and store flammables correctly, it reduces risk)

### What corrective action was taken?

- Research group to dispose of metal catalysts in a separate waste container inside the hood. Implemented immediately.
- Research group to quench catalyst for a longer period.

### How can incidents like this be prevented?

- Keep any chemical waste containers in the hood not on the bench.
- Have clear documentation of disposed waste.
- Thoroughly quench the catalyst prior to disposal.
- Read the Monthly Safety Focus.

### References:

**Fire Extinguisher Training is available for all students. Contact Diana to set up a training.**

