

LESSONS TO BE LEARNED

Generated from Actual Incidents by EHSO

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Type of Incident: **Laboratory fire**

What Happened: Researcher was using sodium hydride when it caught fire. Solid sodium carbonate smothered the chemical fire and a carbon dioxide fire extinguisher was used to coat material near the burning chemical.

Immediate Cause: Spontaneous ignition of 95% sodium hydride caused the fire. It was a very humid day and the material reacted with the moisture in the air releasing hydrogen gas and heat.

Root Causes: Failure of the laboratory supervisor to perform a Process Hazard Review (Section 11.0 pg. 71 of the Chemical Hygiene Plan, <http://www.uic.edu/depts/envh>), including consideration of the ambient conditions in the laboratory that could present a hazard.

Corrective Actions:

1. Laboratory supervisor reviewed procedure and determined that a 50-60% suspension of sodium hydride in mineral oil would be less likely to ignite and will substitute that in the future. The laboratory supervisor could also consider a procedural change such as performing the procedure in a glove box with an inert atmosphere.
2. Train laboratory personnel in the change of procedure/substitution.

Note: The procedures for handling a fire were not followed, as per the Chemical Hygiene Plan. The fire alarm should be activated in the case of fire and 6-3473 (6-FIRE) should be dialed. Even if laboratory personnel attempt to extinguish the fire, the alarm will alert the campus police who will determine if the Chicago Fire Department needs to be called. This will also initiate building evacuation in the case that the fire gets out of hand, or an explosion occurs.

