UCLA ENVIRONMENT, HEALTH & SAFETY

Accident Investigation Report

Date of Injury: Dec 29, 2008 | Time of Injury: 2:57 pm | Location at Time of Injury: Molecular Sciences Room 4221

Employee Name: Sangji Sheharbano | Employee Dept.: Chemistry and Biochemistry | Employee Job Duties: Research Associate

Accident Description:
The cause of the injury was the accidental release of the pyrophoric compound, t-butyl lithium, which was dissolved in pentane from the syringe that the employee was using. The compound is pyrophoric and will catch fire on exposure to air. The barrel of the syringe was either ejected or pulled out of the syringe, causing liquid to be released. The amount of liquid released has not been determined, but the maximum capacity of the syringe is 60 mls. The liquid released from the syringe spilled on the employee's torso and hands, and upon contact with air, immediately caught fire. The employees clothing caught fire. The fire was extinguished by a fellow employee (Weifang Chen) using a lab coat and water from the sink, and 911 was called. Emergency responders doused the employee under the emergency shower and transported her to RRUCLA Emergency room. She was transferred to the Grossman Burn unit in Sherman Oaks. During the investigation, it was noted that the syringe used to transfer the liquid was a plastic syringe, which melted during the fire. The syringe and needle were examined, and during discussion with Dr. Harran, it was noted that this was the routine method to transfer the liquid. The container of t-butly lithium in pentane is generally pressurized before attempting to withdraw liquid from the syringe. It has not been determined from eyewitnesses if this was done. The employee had nitrile gloves on when handling this material, but did not have a lab coat, or apron. It has not yet been determined if she was wearing protective eyewear, although one of the witnesses recalls that she did have eye protection.

Medical Treatment Received: Emergency treatment at Ronald Reagan UCLA Emergency. Transferred to Grossman Burn Center, Sherman Oaks

Time lost from work? (•) Yes ( ) No | If yes, how many days? | Date returned to work

Other employees involved/witnesses: Dr. Patrick Harran/ Weifang Chen/Hui Ding

Investigation

Interviewee (check all that apply): [ ] Employee [x] Witness [x] Supervisor [x] Other (title): Post Doctoral Fellow

Name of Interviewee: Dr. Patrick Harran | Interview Date: Dec 30, 2008 | Interview Setting: In Person

Interview Statement:
Dr. Harran stated that the employee had performed this experiment before and had been trained in how to handle pyrophoric compounds, and specifically t-butyl lithium in pentane. Since he did not witness the procedure, he speculated that the employee had pressurized the reagent bottle with argon, as taught. She was withdrawing the barrel of the syringe when the barrel suddenly separated from the syringe. It is not known if the reagent bottle was overpressurized or if the employee withdrew the syringe barrel with too much force. It is also not known what volume of liquid was being withdrawn into the syringe. The syringe used was a HSW 60 ml plastic syringe with a BD 20 gauge needle with a Luer Lok fitting. Dr. Harran said that this was the appropriate method for transferring this reagent.

Has the injured employee ever received training specific to this injury? (•) Yes ( ) No

If yes, when was the most recent training conducted? Unknown | If yes, is the training documented? No

Types of training provided: Instructions from the Principal Investigator, Dr. Harran

Recommended Corrective Actions

Investigator: Bill Peck

The employee may not have been using best work practices while handling the syringe to transfer a pyrophoric liquid. The employees should be instructed in safer handling techniques. A lack of consistent PPE usage was evident, as the employee was not wearing a lab coat.
The laboratory, Mol Sci 4221, exhibited poor housekeeping, and an excess amount of flammable material was stored in the laboratory. A laboratory inspection had been done on November 5, 2008, which noted the deficiencies in the lab. Upon investigation, it was found that most of the corrections to the laboratory were not accomplished by 12/30/08. The deficiencies noted are the lack of an NFPA fire diamond placard on the door, the lack of a first aid kit, the lack of sufficient spill cleanup material, improper storage of flammable materials, improper storage of water and air reactive chemicals and personal protective equipment not being used by laboratory employees.
Corrective action requires that these deficiencies be corrected in a timely manner.

Date investigation opened: Dec 29, 2008

Date investigation closed: open

Injury Prevention Category:

[x] Administrative Controls
[ ] Engineering Controls
[x] Work Practice Changes

Person(s) referred to for corrective action: