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Lesson Learned Briefing

No.: LL08-0039

Title: UCB Student Suffers Severe Skin Burn

Event: LBNL Event

Event Date:

Category: ES&H - Chemical Hygiene

Lesson Learned Statement:
The proper Personal Protective Equipment (PPE) should always be worn when working with corrosive material for protection against potential injury. Industrial Hygienists can be contacted to provide guidance on proper PPE selection.

Discussion:
A UC Berkeley student was seriously injured on campus when he splashed the corrosive organic chemical oleylamine on his forearm. The student is also affiliated with LBNL, but he was not working on an LBNL project when he was injured.

Although he responded promptly and washed his arm with soap and water for about a minute, this did not prevent extensive, but delayed, 1st and 2nd degree skin burns. He sought treatment the following day at an area hospital emergency room.

The injured student was not wearing a lab coat at the time of the splash, although he was wearing gloves. Where his arm was covered by his short sleeved shirt, the severity of the skin burns was greatly attenuated. While there were several factors that lead to this splash and resulting injury, it is likely that the use of a lab coat would have prevented the injury entirely.

A second important factor in this injury was the student's lack of full appreciation of the corrosiveness of the material. While he was aware that it was identified as a corrosive in the MSDS, the lack of prompt effects (burns, pain, discoloration) lead him to believe that the MSDS exaggerated the hazard. As a result he only washed his skin for 1 minute and did not promptly seem medical care. The skin burns appeared only after several hours. Many common corrosive organics can have delayed skin effects (e.g. dichloromethane, phenol, 2-aminoethanol) that may not be fully appreciated.

Oleylamine is commonly used as a surfactant in nanoparticle synthesis. A total of

10 containers have been identified in other MSD labs at LBNL. The owner and users have been reminded of the corrosiveness of this material and the appropriate first aid response. The correct response to skin contact is to wash with soap and water for at least 15 minutes followed by prompt medical evaluation. In the case of exposure covering more than a few square inches of skin, emergency help should summoned while continuing to wash the effected area.

The following PPE is required when working with corrosives: Lab coat, safety glasses with side shields, long pants, closed-toe shoes and chemically resistant gloves. Additional PPE such as chemical goggles, face shields and chemical aprons shall be worn to protect against work having greater splash potential. The Lab's Chemical Hygiene and Safety Plan shall be consulted for proper PPE and glove selection. An EH&S industrial hygienist may also be contacted to provide guidance.

Priority Boxes: ☐ ORPS Reportable ☑ OSHA Recordable ☐ PAAA ☐ Other

ISM Code: Develop and Implement Hazard Controls

Uploaded documents/attachments:

MatSafety_081201.pdf

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