

Blue Alert- Use Face Shield Eye Protection When There's a Chance for Splash

Date: 9/7/2004

Lessons Learned Summary:

In the event described below, the cause of the splash was the fact that the bench top container, into which the staff member poured the dilute acid solution, had high sides and the glassware sat at the very bottom of this container. The staff member incorrectly assumed he could safely pour the dilute acid into this container based upon the fact that the dilute acid is normally poured into glassware in secondary containers during the normal course of this operation when performed in a fume hood. However, the staff member did not recognize that the conditions for the operation had changed (pouring on the bench top rather than in the fume hood), and that the safety requirements for this operation had also changed as a result. Because the staff member incorrectly assessed the likelihood that there would be a splash from pouring the small amount (50 mL) of dilute acid solution into the glassware within the large container, he was wearing wrap around goggles rather than a face shield.

Discussion of Activities:

A staff member splashed a small amount of dilute acid (10% nitric/10% hydrochloric) on his face while pouring ~50 mL into a bench top container for acid leaching labware when the splash occurred. The staff member was wearing procedure-required PPE, for work without a splash hazard, including laboratory coat, gloves and wrap around safety glasses. The acid landed on the safety glasses and the staff member's cheek/eye area. The staff member immediately went to the nearest eye wash station and washed his eyes for 15 minutes as a precautionary measure.

Analysis:

The glassware cleaning operation is typically performed as follows:

- 1) The dilute acid solution (10% nitric; 10% hydrochloric) is poured into the glassware to be cleaned, which is in a secondary container in a fume hood.
- 2) This glassware (containing acid solution) and secondary container is then moved and placed into a larger container located on the bench top. All of the pouring of the dilute acid solution is typically done within the fume hood. However, there was a small amount (50 mL) of the dilute acid solution remaining after all of the glassware had been placed in the bench top container. Rather than waste the remaining acid, or move all of the glassware back into the fume hood, the staff member poured this remaining dilute acid solution directly into the glassware within the container located on the bench top. It was during this bench top operation that the splash occurred.

Recommended Actions:

- 1) Remind staff members of the high likelihood of a splash when pouring corrosive liquids outside of a fume hood and that when doing so a face shield, rather than wrap around goggles, should be used.
- 2) Revise the SOP ("Eye and Face Protection") to require the use of a face shield when pouring corrosive liquids outside of a fume hood.

Priority Descriptor: BLUE/Information

Work / Function: Conduct of Operations - General, Conduct of Operations - Procedure Development, Conduct of Operations - Work Planning, Laboratory Experimentation, Management, Occupational Safety & Health - Personnel Protective Equipment, Research & Development

Hazard: Personal Injury / Exposure - Other, Personal Injury / Exposure - Hazardous Material (General), Personal Injury / Exposure - Toxic Material

ISM Core Function: Analyze Hazards, Develop / Implement Controls, Feedback and Improvement

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