HAZARD ALERT

Subject: Eye Splash caused by Exploding Cryovial

Incident Date: July 2018

Incident Description
A graduate student was completing an inventory of biological samples frozen in cryovials stored in a Dewar filled with liquid nitrogen. The open box containing the cryovials was placed on the floor to enable photo-taking. The graduate student attempted to take a photo of the top of the cryovials when they heard a loud bang and felt an immediate pain in their eye. The graduate student immediately proceeded to the nearest emergency eyewash station to flush their eyes. After several minutes of flushing, the water became uncomfortably hot so the graduate student ceased flushing their eyes and proceeded to the emergency department.

Injuries Received
Lab member in the immediate vicinity accompanied the graduate student to the emergency department where the graduate student was assessed by a physician. The graduate student did not suffer any permanent damage to their eye.

Immediate and root cause(s):
1. Cryovial contained liquid nitrogen due to Dewar being filled to a level that cryovials were submerged in the liquid phase.
2. Safety goggles were identified in the Hazard Assessment and Control Form but were not provided and their use was optional.
3. The Cryogenic Materials Standard was not retained or implemented in the Lab Safety Manual in the lab.
4. Standard Operating Procedure for inventorying biological samples frozen in liquid nitrogen was not developed with detailed instructions on safe handling and use.
5. Emergency eyewash was not being flushed regularly as per the Emergency Eyewash and Shower Standard.

Corrective Actions:
1. Develop, communicate and ensure use of Standard Operating Procedure for filling Dewars with liquid nitrogen such that cryovials are not submerged in the liquid phase.
2. Ensure personnel review and follow controls identified in the Hazard Assessment and Control Form.
3. Review and follow the Cryogenic Materials Standard.
4. Implement the “Weekly Activation and Flushing of the Emergency Eyewash Record” as per the Emergency Eyewash and Shower Standard.
5. Ensure safety goggles in addition to a face shield as provided and used when working with cryogenic materials.
6. Develop, communicate and ensure use of Standard Operating Procedures for inventorying biological samples frozen in liquid nitrogen.

Continuing Actions:
Ensure cryovials with externally threaded caps are used for storing biological samples and are examined to ensure no visible defects around the closure rims before placing into Dewars containing liquid nitrogen.