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From Meredith Brown [racer@lanl.gov](mailto:racer@lanl.gov)

Subject- Blue Alert- Employee's Eye Burned While Handling Caustic Chemical

**Title- Blue Alert- Employee's Eye Burned While Handling Caustic Chemical**

Date April 17, 2000 Identifier 2000-ALO-WID-0003

**Lessons Learned Statement-** Proper protective equipment must be worn and hygiene practices must be utilized when handling caustic materials.

**Discussion of Activities-** An employee was participating in a field exercise for Mine Rescue training. The training required the employee to wear a Drager self-contained breathing apparatus (SCBA) including a full face respirator. Shortly after the exercise began, the employee complained of blurred vision and felt a burning sensation in his right eye. The employee was taken to the WIPP Health Services Clinic where his eye was flushed. When the burning sensation did not cease, the employee was transported to the company physician for further evaluation and treatment. The company physician determined the irritation was the result of caustic entering the employee's eye and producing a chemical burn. Prior to performing the field exercise, the Drager SCBA units are prepared for use. The Drager SCBA is a closed circuit breathing apparatus utilizing medical grade oxygen to generate breathing air. Breathing air is filtered through a canister filled with sodium hydroxide pellets (Dragasorb) to remove carbon dioxide generated during the breathing process. The Dragasorb is scooped from a bulk container and packed into the canister by site personnel prior to performing the field exercise. The Dragasorb is a caustic material that produces dust/residue as it is being transferred from the bulk container into the canisters.

**Analysis-** An investigation determined the employee did not perform the proper hygiene to remove the Dragasorb from his hands and face after he filled the canisters. In addition, the employee did not wear the proper personnel protective equipment (eye protection, gloves, dust mask) when working with the chemical as identified on the Material Safety Data Sheet. The investigation suggested the employee had the chemical on his hand and inadvertently wiped his eye or the chemical was on his forehead and entered his eye when he began to sweat while wearing the respirator. Also during the investigation it was determined that employees were experiencing eye irritation from the anti-fog material (Drager brand) used to coat the lenses on the SCBA facemask. A discussion with a representative from Drager indicated the anti-fog material has to dry for 60 minutes before donning the mask. It was determined that the anti-fog was applied to lenses just prior to being donned. This process does not allow for the VOCs to evaporate and may cause irritation to the wear's eyes.

**Recommended Actions**

\* Perform a formal Job Hazard Analysis or develop approved work instructions for filling the canisters with Dragasorb. This will assure that proper personnel protective equipment and appropriate hygiene practices are identified to prevent contamination.

\* Apply anti-fog material to the SCBA face piece lenses at least 60 minutes prior to donning. This will allow VOCs contained in the anti-fog to evaporate.

Priority Descriptor Blue/Informational

Work/Function(s) Conduct of Operations - General

User-Defined Category Personnel Protective Equipment

Hazards Personnel Injury Exposure- Hazardous Material

ISM Core Functions(s) Analyze Hazards

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Authorized Derivative Classifier Not applicable

Reviewing Official J. R. Galle

Keywords Eye irritation, Dragasorb, Job Hazard Analysis

References WIPP Internal Investigative Report, Mine Rescue Eye Injury, dated March 24, 2000