

Date: Fri, 19 May 2000 11:32:35 -0400  
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Subject: Yellow Alert: Incorrect Use of Lubricant Results in Near Miss

**TITLE: Yellow Alert- Incorrect Use of Lubricant Results in Near Miss**

IDENTIFIER: Y-2000-OR-UTBX10-0501      DATE: 05-19-00

**LESSON LEARNED:** Using the incorrect lubricant for the lubrication of hoses and couplings prior to banding could result in the hose slipping off while under pressure and a near miss.

**DISCUSSION:** Pipefitters were replacing hoses from heating and cooling skids for an evaporator. The hoses were installed on serrated couplings using bands to secure the hose to the couplings. While in the process of pressure testing the hose after installation, the hose slipped off the coupling. An employee who was standing approximately 4 feet away was struck on the lower leg by the hose, knocked off balance and fell to the ground. After determining the employee was not injured, the workers resumed pressure testing after cutting the end off of the hose which had separated from the serrated coupling and cleaning the coupling and end of the hose. The task was completed without further delay or incident.

**ANALYSIS:** The lubricant used in this incident is typically used for lubricating electrical wires prior to pulling the wires through conduit. Although the product's name leads one to believe it is water based and would be appropriate for use as a lubricant for hoses and couplings, the product has been formulated to be slow drying and to retain its lubricity for months after it dries. A process and product engineer for the manufacturer of the lubricant used in this incident, stated that their research has been limited to cable pulling application and the product has properties that are not desirable for using as a lubricant for hoses and couplings.

**RECOMMENDED ACTIONS:** Proper work planning can prevent selecting the wrong lubricant. The general hose coupling procedure from the "Rubber Manufacturer's Association Handbook" calls for lubricating the hose ends and the coupling shank for easier insertion using (1) rubber cement, (2) soap and water, or (3) water alone. These lubricants lose their lubricity upon drying, therefore, would not contribute to a hose slipping off of a banded coupling while the hose is under pressure. Even though commercial products might appear to be an acceptable or better alternative, the manufacturer should be contacted to make sure their product would be acceptable for that application. If the manufacturer cannot provide documentation that their product is acceptable for the application, use one of the three lubricants listed above.

ORIGINATOR: UT-Battelle, LLC; C. E. Arnwine, 865-241-3134; Quality Services Division

VALIDATOR: UT-Battelle, LLC; J. F. Walker, Jr., 865-241-4858; ChemicalTechnology Division

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PRIORITY DESCRIPTOR: Yellow / Caution (Potential Event Conditions)

DOE Functional Category: Safety

UT-Battelle Functional Category: Safety and Health Work Function: Maintenance / HVAC

Hazards: Personal Injury / Exposure (Radiation /Contamination)

ISMS Core Functions: Analyze Hazards, Develop/Implement Controls

KEYWORDS: lubricant, hose, coupling, pressure test

REFERENCE: Occurrence Report ORO-ORNL-X10CHEMTEC-2000-0003

**FOLLOW-UP ACTION:** Information in this report is accurate to the best of our knowledge. As a means of measuring the effectiveness of this report, please notify Connie Arnwine at 865-241-3134 or e-mail [a93@ornl.gov](mailto:a93@ornl.gov) of any action taken as a result of this report or of any technical inaccuracies you find. Your feedback is important and appreciated.