

Isopropyl Alcohol Spill

Situation: EHS received word of an isopropyl alcohol spill via email by a UNM staff member. An investigation was conducted.

The isopropyl alcohol is stored in an outdoor shed. During normal operations a 13-gallon (50-Liter) HDPE carboy is used to transport the isopropyl alcohol into the building via a freight elevator.

A graduate student was instructed to get isopropyl alcohol for use in the laboratory. The freight elevator was not working that day, so the student planned to use the passenger elevator at the main entrance. A carboy was placed on a wheeled cart and moved along the west side of the building to the main entrance. Upon entering the building, the carboy tipped over, fell to the ground and cracked, causing the isopropyl alcohol to spill on the floor and non-slip carpet tiles in the entry way and outside. Approximately 4-5 gallons of isopropyl alcohol was spilled. The spill occurred at approximately 2:30 PM.

Another student employee witnessed the incident and called their supervisor. The supervisor began to clean up the spill with a mop, and used spill “pillows” to prevent the isopropyl alcohol from reaching the nearby elevator and stairwell. The graduate student notified the Unit Administrator who then called Work Control to report the spill. Work Control contacted the Custodial Department, and they responded to the spill. The custodian cleaned up the spill using a wet vacuum. The isopropyl alcohol contained in the wet vacuum was then disposed of down the drain at the UNM Automotive Center. EHS staff was notified of the spill after Custodial had responded because the smell of isopropyl alcohol had permeated the building. EHS arrived after 4:00 PM to assess the scene. A floor fan was brought in to help evaporate the isopropyl alcohol and alleviate the odor.



Causes:

1. Failure to properly adjust the transport procedure for a longer and rougher route due to the freight elevator being out of order.
2. Chemical container not regularly replaced resulting in cracking when it struck the ground.

3. Additionally, EHS was not notified by the personnel involved in this incident.
4. Isopropyl alcohol is flammable and in the large quantities spilled, could have resulted in a fire or explosion.
5. Work control should have rejected the Work Order to clean chemical spills. The vacuuming of a flammable liquid could have resulted in fire or explosion.

Corrective Action: Memo to department heads outlining the investigation and conclusions.

Memo to Facilities Management notifying them of the dangers of using a wet-vac around isopropyl alcohol.

Prevention: Students, staff, supervisors and/or building managers should be trained in proper spill response.

A written procedure that documents the possible hazards of using isopropyl alcohol and other chemicals and how to mitigate them.

Communicate with and train employees on these hazards before they begin work.

Communicate with and train employees on the proper procedures to transport chemicals.

Train employees that if deviations from the above procedures become necessary, assess what could go wrong and how to mitigate those hazards before beginning work regardless of perceived rush.

Inspect containers used for transport. The plastic carboy appears to have been brittle. If the container had been in better condition a spill may have been avoided.

For any chemical spill which the lab cannot adequately clean up on their own, EHS shall be notified immediately to assess the potential hazards and identify the correct response measures to take to ensure the safety of the students and staff.

Reference: UNM *Chemical Hygiene Plan*