

Wrong Hose Causes Ammonia Leak

One morning in July 2009, at a plant in South Carolina, a truck of anhydrous ammonia was unloaded into a storage tank using a hose stored on the truck trailer. Shortly after the transfer started, the unloading hose ruptured (Photo 1) and released a cloud of toxic ammonia gas. The cloud traveled across a nearby highway and into a wooded area, where it dissipated.

A motorist drove through the cloud of ammonia and off the road, where she exited the car and subsequently died from ammonia exposure. Fourteen people reported medical problems; seven were hospitalized for respiratory symptoms and released the same day. Residents in the area were forced to shelter in place, and the highway was closed for several hours. Approximately 7,000 lb of ammonia was released.

The investigation of the incident revealed that the unloading hose was not chemically compatible with anhydrous ammonia. Other factors that likely contributed to the rupture include inadequate unloading procedures and inadequate inspection of the unloading hose. Had the hose been sufficiently inspected, the operator would have discovered it was only intended for use with liquefied petroleum gas (LPG), as indicated by the label, "LPG Transfer Only" (Photo 2).

The trucking company found that one of its LPG trailers was equipped with an unloading hose intended for ammonia, suggesting that the hoses had been switched some time before the incident. The ruptured hose may have been used to unload ammonia as many as 12 times prior to the incident.



What Can You Do?

- Check that hoses are suitable for the unloading or loading operation. Be particularly careful if the hose is supplied with the truck.
- Read labels and warnings on hoses, and ask for help if you are not sure whether the hose is appropriate for use.
- Inspect hoses, gaskets, and fittings for damage, including those that come with the truck. Do not use hoses if they are not in good condition.

- Properly store hoses to protect them from damage or kinks.
- Follow plant requirements for inspection and replacement of all hoses.
- If you routinely unload a material using a hose that comes with the delivery truck and you see that the hose looks different, check that it is suitable for use prior to the transfer.
- Read the August 2004, July 2007, and October 2011 issues of the Beacon on other hose failure incidents.

Are you using the right hose?

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