

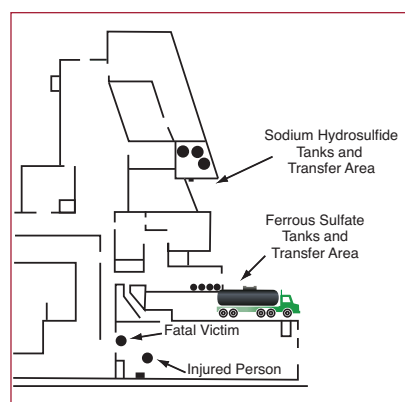
March 2009

## Fatality Caused by Unloading the Wrong Chemical into a Storage Tank!

A truck of sodium hydrosulfide solution arrived at a factory at about 3:30 a.m., and was to be unloaded to a storage tank in the area near the top center of the diagram at the right. The truck driver had never been to the plant before, and asked the plant shift supervisor for assistance. The shift supervisor had been told to expect a chemical shipment, and assumed that the chemical would be ferrous sulfate, which is the only chemical that he had ever received on his shift. He directed the truck driver to the unloading station for ferrous sulfate, where the truck is shown in the diagram. The shift supervisor did not verify the identity of the chemical in the truck, although the shipping papers did properly identify the contents as sodium hydrosulfide. The supervisor signed the shipping papers without reading them and left the area. No plant employees remained in the unloading area.



The truck driver connected his truck to a hose that was connected to the ferrous sulfate storage tank as shown in the photographs. He began to unload the sodium hydrosulfide solution into the ferrous sulfate tank. Unfortunately, sodium hydrosulfide and ferrous sulfate react to form hydrogen sulfide, a highly toxic gas. Shortly after the unloading began, a plant employee in the basement of the building noticed a pungent odor and lost consciousness. He regained consciousness and made his way outside, where he got help from other employees, who called emergency response personnel. They found the truck driver unconscious inside the building, and he was pronounced dead at the scene. He was determined to have been overcome by hydrogen sulfide gas.



## What Can You Do?

- ALWAYS positively confirm the identity of any chemical that you add to any vessel. Check the identity of the material, double check it, and then check it again before beginning the chemical transfer!
- NEVER assume that you know the contents of any truck, railroad car, drum, or other raw material container that arrives at your plant without carefully checking all labels, vehicle placards, and shipping papers.
- Follow all of your plant's procedures for identifying materials, which might include checking shipping papers or letters of analysis, or sampling and testing incoming materials. Ensure that all unloading personnel are trained and understand procedures. If unloading procedures do not exist at your facility, communicate the deficiency to your supervision.
- Remember that the consequences of accidentally mixing incompatible chemicals can be severe — including potential for explosion or generation of highly toxic materials.
- Be aware of potential hazardous reactions between chemicals stored at your facility. Consider using special fittings and unloading connections to make unloading mistakes more difficult, helping to prevent them.
- Make sure that all unloading connections and pipes, as well as all storage tanks, are clearly labeled.

**Never add any chemical to a vessel without confirming that it is the right material!**

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