

Vacuum trucks can catch fire AND explode!

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← Typical vacuum truck

Photo of the vacuum truck incident
(Santa Clara Wastewater Co. explosion)



At a wastewater facility in Santa Paula (Southern California), on November 18, 2014, a vacuum truck explosion sprayed hazardous material over the site and sent dozens, including three firefighters, to hospital.

Sodium chlorite, an oxidizing agent, was identified in the months following the disaster. Apparently, the chemical was being used as a water treatment agent for the first time. It was vacuumed into the truck, which was used for disposal of other materials. The combined substances interacted, causing an explosion that blew off the back of the truck and spread the contents across the area. Upon release, the mixture dried and started to burn. Explosions spread the fire to surrounding containers, sending billowing black smoke into the sky and forcing police to shut down several roads. Residents within one mile were subject to mandatory evacuations, and those within three miles were ordered to shelter in place.

Did you know?

- Vacuum truck fires/explosions can occur due to incompatible materials combined in the truck.
- Another cause is presence of flammable liquids:
 - Vacuum trucks operate at lower pressure, which can cause low-boiling material to vaporize. These vapors can exit through the truck's vent and could ignite.
 - Vacuum trucks can draw in liquid and some air, which can create a flammable mixture in the vapor space of the truck and generate static electricity due to the mixing of liquids and air.
 - The mixing and turbulence inside a vacuum truck are ideal for static generation.

What can you do?

- Many companies use permit systems to safely manage vacuum truck operations. If you are working near a vacuum truck, make sure all aspects on the permit are completed correctly.
- Vacuum trucks collect materials from many sources. Before starting, make sure your material and what is in the truck are compatible. If you are not sure, stop and ask.
- Verify all vehicles being loaded or unloaded are grounded and bonded – including vacuum trucks.
- Vacuum trucks can be used anywhere. If the vent discharge can contain flammable vapors, make sure it will not contact any ignition sources.

Vacuum trucks are useful systems that require special attention