



Safety Alert

From the International Association of Drilling Contractors

ALERT 12 – 29

ELECTROSTATIC CHARGE RESULTS IN METHANOL TANK EXPLOSION

WHAT HAPPENED:

A worker was climbing to the top of a 500 gallon (1,893 liter), polyethylene methanol storage tank to check the fluid level. When the worker reached the top of the tank, he touched the cap on the inner tank with his hand and the flammable vapor around the cap ignited resulting in an explosion and flash fire. The worker received first aid for a second degree burn to his arm.

WHAT CAUSED IT:

- The worker had accumulated an electrostatic charge while climbing to the top of the tank.
- Flammable methanol/air mixture had developed inside the inner tank or interstitial space.
- It was 18 degrees Celsius (66 degrees Fahrenheit) at the time of the incident and methanol has a flash point of 11 degrees Celsius (52 degrees Fahrenheit).
- Level inside the tank was low (less than 10 percent of total volume).

CORRECTIVE ACTIONS: To address this incident, this company did the following:

- The Safety Department had already evaluated the suitability of plastic tanks for the storage of flammable fluids such as methanol, and recommended that the company change out the existing plastic tanks since they are nonconductive and difficult to ground. Also, as per API RP 2003, plastic tanks are not recommended for the storage of flammable liquids.
- The company updated their procedures for tank inspections, maintenance and filling.
- The company installed sight glasses and piping on all tanks to allow for fluid level inspection and filling from the ground level with a stinger extending to the bottom of the tank to prevent splash filling.
- Company personnel were instructed that under no circumstances is climbing to the top of a tank permitted.
- Personnel were reminded that if it is necessary to open the tank cap, a personal ground strap must be worn in combination with gauntlet style gloves and that, if necessary, platforms should be provided to stand on.

The Corrective Actions stated in this alert are one company's attempts to address the incident, and do not necessarily reflect the position of IADC or the IADC HSE Committee.

This material is presented for information purposes only. Managers & Supervisors should evaluate this information to determine if it can be applied to their own situations and practices

Copyright © 2008 International Association of Drilling Contractors All rights reserved.

Issued November 2012