

Fire while Filling a Portable Container!

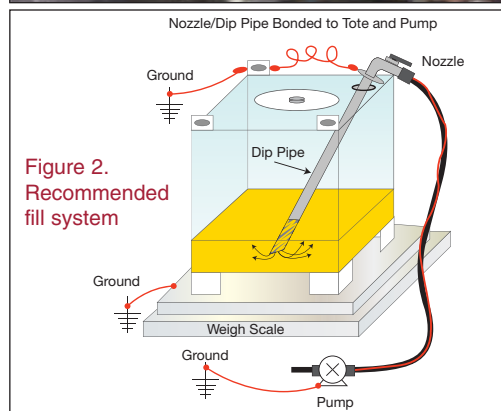
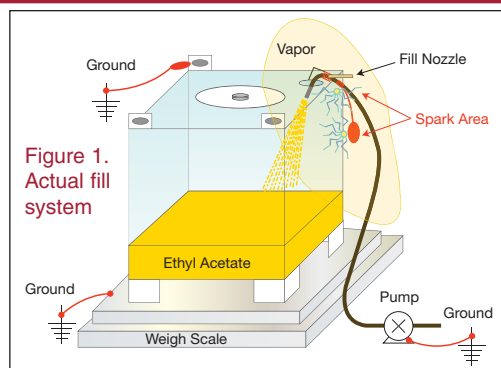
If you read the December 2008 Beacon (p. 27), you may notice that the pictures are the same. Yes, this is the same incident.

A fire started in a packaging area while a 300-gal portable steel tank (a "tote") was being filled with ethyl acetate. The December Beacon provides more information about the incident. It discusses the importance of proper bonding and grounding of all conductive equipment to prevent static electric sparks, which can ignite a flammable atmosphere. We have often emphasized in the Beacon that all incidents have multiple lessons, and here we use the same incident to make several additional points.

Note that as shown in Figure 1, the tote was being filled with a short nozzle, and the flammable ethyl acetate dropped into the tote as a stream through the air, and undoubtedly also formed small droplets and mist particles. **Static electric charge can be created by liquid freely falling through air**, and can result in sparks that can ignite a flammable atmosphere.

The practice recommended by the National Fire Protection Association (NFPA 77) for filling portable metal tanks is to fill from the bottom, which can be done with a dip pipe. Use a slow velocity of 1 m/s (3.3 ft/s) or less until the dip pipe is submerged to about 150 mm (6 in.). Figure 2 shows the recommended system.

We are still not finished with this incident! We will present some more lessons in the February Beacon.



PSID Members Free Search for "Static Charge"

What Can You Do?

- Always use properly designed equipment for filling any containers with flammable liquids. Some things to consider:
 - ◆ Use dip pipes or bottom-filling
 - ◆ Use an appropriately low flowrate when there is potential for free-falling liquid
 - ◆ Properly ground and bond all equipment and containers
 - ◆ Use fill nozzles and hoses designed for flammable material handling, for example, a hose with an integral metal braid bonded to piping or fittings connected to the hose
- When you read the Beacon, look for other lessons from the incidents described. We have a limited amount of space, and there is much more to learn from the incidents we discuss than we can describe in a single page.

Avoid free-fall of flammable liquids when filling containers or tanks!

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