

Fire while filling portable container!

If you read the December 2008 Beacon, you will notice that the pictures are the same! Yes, this is the same incident. A fire started in a packaging area while a 300-gallon portable steel tank (a "tote") was being filled with ethyl acetate. See the December Beacon for more information. In December, we discussed 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 we are using the same incident to make several additional points.

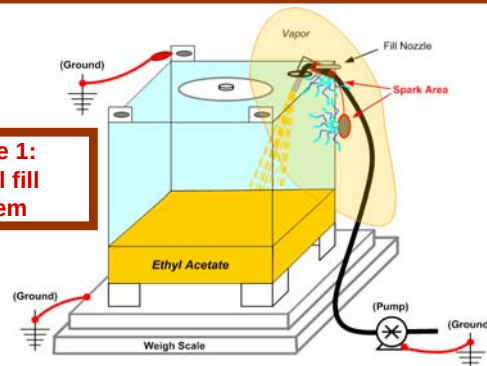
Note, as shown in Figure 1 (top), that the tote was being filled with a short nozzle, and the flammable ethyl acetate dropped into the tote as a stream through the air, and undoubtedly also formed small droplets and mist particles. ***Static electric charge can be created by liquid freely falling through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

The recommended practice (by the National Fire Protection Association – NFPA 77) for filling portable metal tanks is to bottom-fill, which can be done with a dip pipe. You should use a slow velocity of 1 meter per second (3.3 feet per second) or less until the dip pipe is submerged to about 150 millimeters (6 inches). Figure 2 (bottom) shows the recommended system.

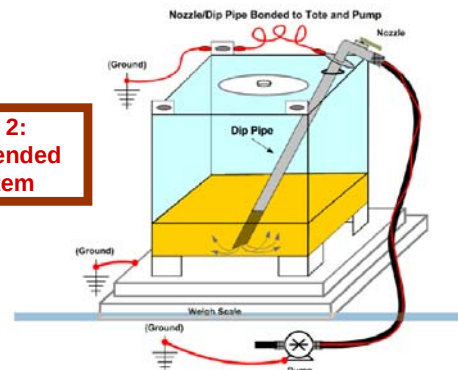
We are still not finished with this incident! We will talk about some more lessons in the February Beacon.

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**Figure 1:
Actual fill
system**



**Figure 2:
Recommended
fill system**



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 appropriately low flow rate 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!

On behalf of all of the readers of the Beacon in 29 languages, CCPS and the CCPS Process Safety Beacon Committee would like to thank all of our volunteer translators for their efforts on behalf of process safety throughout the world in 2008.

All translators are volunteers, and the only compensation that they receive is the knowledge that their efforts are helping to improve process safety throughout the process industries. Because of their volunteer efforts, CCPS is able to distribute the Process Safety Beacon in 29 languages as of December 2008. If you know, or meet, any of our translators in the course of your work, please thank them personally for their work. If you are interested in translating the Beacon into a language which is not currently available, please contact us at ccps_beacon@aiiche.org and we will provide you with information on the procedure for translation.

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