



Weekly Safety Meeting

Fuel Transfer and Static Electricity Safety

Some workers may not be aware of this, but static electricity can become a huge threat in the workplace, especially when working on or around fueling operations. If there is a discharge of static electricity while fuel is being dispensed, there is a possibility of an explosion or fire erupting. Because of this threat, it is extremely important to know how to identify situations and conditions that could be hazardous when dealing with static electricity and fueling operations. Static electricity buildup creates a fire safety hazard that is important for you to understand. You will need to know exactly how to stop static electricity from becoming any type of a factor when fueling. Your life depends on it.

Many industrial operations utilize substantial quantities of flammable liquids to operate company vehicles, power equipment, tools, etc. Consider for a minute the hazards associated with the storage and transfer of these flammable liquids and the potential for fire caused by the discharge of stored static electricity.

In simple terms, static electricity is defined as an imbalance of negatively and positively charged particles. In order to reduce this hazard at your workplace, remember and understand the terms 'bonding' and 'grounding.' These terms denote a safeguard that will prevent the potential for static discharge to occur during fuel transferring activity.

Bonding and grounding provide a path for electrical buildups to be dissipated into the ground, as opposed to being discharged during the refueling of a company vehicle. Primary flammable liquid storage containers such as 55-gallon drums and above ground fuel tanks have the capability to store large amounts of static electricity. They can store substantially more than would be required to produce disastrous results. Bonding and grounding is the preferred choice for prevention.

Static Electricity and Grounding:

The movement of volatile materials through hoses and piping can create electrostatic charge. When the voltage associated with that charge reaches certain levels, a spark can jump across the gap between a dispensing nozzle and a portable container and ignite flammable vapors. Static charges, however, will not accumulate if equipment is firmly electrically grounded. Grounding "bleeds off" the charges, directing them harmlessly to the earth. Proper grounding dissipates the charges as fast as they are generated. To best illustrate the procedure, consider the simple process of transferring solvent from a 55-gallon drum to a flammable liquid container.

Ground the 55-gallon Drum:

Grounding means you attach a conductive copper wire from the ground to the 55-gallon metal drum. You must make a good contact to the ground, which can be a metal “grounding rod” driven several feet into the earth or, if available, connect the ground wire to the cold-water pipe running through the room. It is important to be sure the copper wire connects cleanly and firmly with both the metal rod in the ground and to the metal surface of the 55-gallon drum. You must make a metal-to-metal connection. The metal drum must not be painted at the point where the ground wire is connected.

Bond a Conductive Wire:

Bond a conductive wire from the metal 55-gallon drum to the metal 5-gallon container. Again, be sure the two contact surfaces are not painted. It's always a good idea to have a safety professional, electrical engineer, and your plant maintenance person test the bonding and grounding to make sure it is correct, especially when you initially implement a bonding and grounding program for flammable liquid dispensing areas.

Transferring Flammable Liquid:

When transferring flammable liquid into a secondary can or when refueling a vehicle from a container, an “alligator clip” connection should also be used between the two containers in order to create a bond.

Summary:

By implementing proper bonding & grounding procedures, you can create a balanced electrical potential and eliminate the hazard for an explosion or fire from static electricity.

Static electricity is "an accumulation of electric charge on an insulated body." Don't set it free to disperse and create havoc in the presence of flammable and combustible fuels.

Workers, managers, and supervisors alike need to be aware of the different situations presented by fueling operations and know how to stop static electricity from affecting the process. If they do not, an explosion could be triggered that could have deadly consequences.

FIRE DESTRUCTION IS ONE MAN'S JOB...FIRE PREVENTION IS EVERYBODY'S JOB!!

Safety Meeting Sign-In Sheet

Supervisor:	Subject:
Location:	Date:
Conducted By:	Trainer Signature:

Name (print clearly)	Signature	Comments / Safety Concerns / Training Requests