



# Flammable Liquid Drums - Best Practices

## Toolbox Talk Lesson Plan

Drums are commonly used to store and dispense a variety of flammable liquids. These liquids include motor vehicle fluids, cleaners and solvents. Under the OSHA's Hazard Communication / GHS Standard, flammable liquids are defined as liquids with flash points of less than 200° F, and include liquids traditionally classified by N.J. Fire Code as flammable and combustible.

Drums are stored in one of two orientations; vertical or horizontal. Let's look at the best practices for each.

### Horizontal drum storage with gravity flow dispensing

Horizontal storage uses a drum cradle, drum caddy, or drum rack to support the drum during use. Drums stored horizontally use a gravity flow method to dispense liquids from the drum to a secondary container. Class IA flammable liquids (NJ Fire Code), such as gasoline, can not be dispensed using a gravity system. Key safety practices for gravity flow dispensing include:

- The system requires a self-closing, drip-proof valve. Faucets should include a built-in flame arrester. Faucets can be metal or plastic. (*hold up approved faucet for students*)
  - Two options to also consider; 1) swivel-connection faucet so that spigot always faces downward, when main faucet is properly tightened, and 2) flexible metal hose extension to lessen spills and provide static protection
- An automatic drum vent must be installed in the top bung. (*show vent & wrench to remove bung cover*) Vents provide protection from negative pressure (vacuum) when dispensing liquids, and pressure relief if heated.
- The drum must be grounded with a wire to an earth ground such as cold water pipe. Ensure contact is with bare, clean metal.
- When dispensing fluid from the drum to a secondary container, always use a bonding wire or strap. Direct metal-to-metal contact with spigot or hose is not reliable. (*Show bonding wire / strap*)
- Provide a spill tray or pad under the faucet / secondary container.



### Vertical drum storage and pump method for dispensing

Vertically stored drums can be on the shop floor, in a flammable liquid cabinet, on a drum pallet, or in the bed of a truck. A manual pump transfers the liquid to the secondary container or vehicle fuel tank. Key safety practices for pump transfer include:

- Only approved pumps may be used. Vent / pressure relief valve must be in place.
- Be sure bonding and grounding connections are in place. Some fill hoses incorporate a wire bonding wire. Spill control must be provided

Remember to bond and ground containers when pouring flammable liquids, such as waste oil, INTO a drum.

Only transfer flammable liquids in a well ventilated space, free of ignition sources such as pilot lights. And it goes without saying, NO SMOKING.

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