



Working Safely With Flammable Liquids

They're called flammable liquids, but it's not the liquid that you need to worry about—it's the vapor that begins to form as soon as the container is opened. This vapor can explode at the first spark from a tool, a match, simple friction, static electricity or even high temperatures. Most flammable liquids are volatile, that is, they evaporate quickly and reach a concentration in the air that could lead to an explosion.

Flammable vapors are especially dangerous because you can't see them, and often you can't smell them. Solvents, cleaning fluids, acetone, alcohol and fuels are some of the flammable liquids you may use on the job.

Working Safely With Flammable Liquids

- ☹ Control the three potential hazards: temperature, concentration of vapor and ignition sources.
- ☹ Read the material safety data sheet (MSDS) for each liquid you use so you'll know its flash point as well as its upper and lower explosive limits—the range in which vapors are at the right concentration to explode if they're ignited.
- ☹ Follow your employer's flammable liquids safety policy.
- ☹ Always wear the correct, properly fitted personal protective equipment.
- ☹ Ventilate the area to keep vapor concentration down.
- ☹ Know which chemicals, such as oxidizers, increase the fire dangers of flammables.
- ☹ Know the location of the correct fire extinguisher to use in a flammables fire.
- ☹ Never smoke in areas with flammable liquids.
- ☹ Avoid mixing flammables; even small amounts of highly volatile liquids can lower the flash point of the mixture to dangerous levels.
- ☹ Check with your supervisor for instruction on how to dispose of flammable liquids.
- ☹ Store flammable-soaked rags and other waste materials in tightly covered, specially designated containers.
- ☹ Never pour flammable liquids down drains.
- ☹ Keep flammables away from welding, cutting and grinding operations.
- ☹ Be cautious with empty drums that have contained flammable liquids.
- ☹ Never do repair work or welding on an empty flammables drum without getting clearance first.
- ☹ Make sure that areas below where you're working are ventilated or sealed off to prevent the vapors from flowing down into them.
- ☹ Special spark-proof switches and fixtures should be installed in areas where flammable liquids are used.

Storing Flammable Liquids

- ☹ Keep flammable-liquid containers tightly covered, and store away from other chemicals and ignition sources in well-ventilated, temperature-controlled areas.
- ☹ Storage areas for flammables should be equipped with nonsparking electrical systems and heat sources.
- ☹ Store flammables separately from other chemicals, especially reactives such as oxidizers, in well-ventilated, temperature-controlled areas.
- ☹ Make sure flammables are stored in authorized containers and are correctly and clearly labeled for flammability. Liquids with a flash point of 80° F or less must be marked with a red label.
- ☹ Make certain containers are fireproof and have vapor screens and vapor-tight caps.
- ☹ Attach grounding wires to flammable storage containers to prevent static electricity buildup.
- ☹ Before transferring flammable liquids from a drum to a container, be sure to connect the container to the drum with a bonding wire before pouring the liquid, since the friction of pouring can ignite the vapors.

IN CASE OF AN EMERGENCY

Chances are, you'll never have to deal with a fire or explosion caused by flammables, but you should still be prepared. Know your employer's emergency plan, and if a fire breaks out, sound the alarm and evacuate the area immediately.



Responding to Emergencies Involving Flammables

APPROPRIATE ACTION

-  If it's a small emergency and you've been trained, you may be able to handle it yourself. If not, get help.
-  Turn off any flames and equipment that could spark.
-  Ventilate the area thoroughly.
-  Clean up any spills, using safe procedures and proper materials.
-  Remove contaminated clothing immediately.
-  If a fire erupts, use the right type of fire extinguisher.
-  If there is any chance of explosion, evacuate the area immediately, closing doors as you leave.
-  Only go back into the danger area if you've been properly trained, and you're wearing the right personal protective equipment.



PREPARE IN ADVANCE

Don't wait for an emergency to happen before you get the information you need to handle it. Know the:

-  location of the material safety data sheet and training materials for flammables.
-  type and location of fire extinguisher to be used.
-  emergency plan (including escape route).
-  location of the nearest fire alarm.
-  location of the nearest eyewash station.
-  location of the nearest showers.
-  location of the nearest fresh-air source.
-  medical emergency phone number.