

# **6 - Flammables: Safety Training**

EH&S – MGA

## **Goals: This safety session should teach you to:**

- A. Understand the safety precautions that are necessary when working with or storing flammable and combustible liquids.
- B. Be aware of the different hazards that these substances pose to workers.

## **OSHA Regulations: 29 CFR 1910.106-108 and 1910.1200**

### **1. Almost Every Business and Home Contains Some Flammable and Combustible Liquids Like Gasoline, Kerosene, Alcohol, Solvents, or Propane.**

- A. Just because they're common doesn't mean they're not potentially dangerous.
- B. Vapors from these liquids can easily start a fire or explosion if they contact an ignition source.
- C. It is important to read all SDSs and follow all safety instructions on container labels and warning signs.

### **2. A Flash Point Is the Minimum Temperature at Which a Liquid Forms a Vapor Above Its Surface in Sufficient Concentration That It Can Be Ignited.**

- A. Flammable liquids have a flash point of less than 100°F. The lower the flash point, the more likely its vapors are to catch fire when exposed to an ignition source.
- B. Combustible liquids have a flash point at or above 100°F.
- C. The vapors burn, not the liquid itself. The rate at which a liquid produces flammable vapors depends on its vapor pressure.
- D. The vaporization rate increases as the temperature increases. Therefore, flammable and combustible liquids are more hazardous at elevated temperatures than at room temperature.
- E. Vapors from nearly all flammable and combustible liquids are heavier than air. If ventilation is inadequate, these vapors can settle and collect in low areas like sumps, sewers, pits, trenches, and basements and can spread far from the liquid itself. If this vapor trail contacts an ignition source, the fire produced can flash back to the liquid.

### **3. Store Flammables and Combustibles in the Proper Areas and Containers.**

- A. Take just what you need for a job, and clean up spills immediately.
- B. Keep all ignition sources far from flammables and combustibles.
- C. Bond and ground containers when transferring these liquids from storage containers into portable containers.
- D. Always keep and move these liquids in covered containers.
- E. Use these liquids in well-ventilated areas. Use a fume hood or other appropriate exhaust ventilation system when handling flammable and combustible liquids in a manner that may produce an airborne hazard.

- F. Up to 5 gallons of flammable liquids can be stored in safety cans that meet OSHA and NFPA 30 requirements and Underwriters Lab standards, including the following characteristics:
  - 1. A spring-closing lid and spout cover
  - 2. Venting devices that prevent hazardous vapor pressure buildup
  - 3. Leakproof construction and corrosion resistance
- G. All containers of flammable liquids should have a “Flammable Liquid” label.
- H. OSHA has detailed regulations for flammable storage tanks and for storage of large quantities of flammable substances.

#### **4. Follow Safe Work Practices Around Flammables and Combustibles.**

- A. Do not eat, drink, smoke, chew gum, apply cosmetics, or store food, beverages, and tobacco products in work areas where flammable and combustible liquids are being used.
- B. Don’t smoke or light matches.
- C. Keep open flames, hot work, and sparking tools away from them. Even dropping a metal tool could cause a spark.
- D. Have fire extinguishers handy wherever flammable or combustible materials are used.
- E. Read SDSs to understand the particular hazards and proper personal protective equipment (PPE) for the particular liquid you are using.
- F. Some substances may be corrosive or have respiratory or other health hazards as well as being flammable.
- G. Open bottles or carboys slowly and carefully, and wear PPE to guard hands, face, and body from splashes and vapors/gases.
- H. Wipe drips/residues from containers and work surfaces.
- I. Put trash like oily rags in properly closed metal containers that are emptied daily.
- J. Always remove/replace clothing that has become saturated with a flammable or combustible liquid—even a small amount can be hazardous.
- K. Never use a passenger elevator for transporting flammable liquids.
- L. Know the proper safety procedures to follow in case of a spill.
- M. Wash hands before leaving the work area and prior to consuming food or beverages.

### **Summation:**

To protect yourself, it’s important to know the characteristics of any flammable and combustible liquids you use. Don’t ever become complacent just because you use them regularly—carelessness could cause a tragedy.