



Flammable and Combustible Liquids

1. What is the difference between a flammable and a combustible liquid?

The lowest temperature at which a liquid releases enough vapor to start burning is called the *flash point*.

Flammable liquids have flash points below 100 degrees Fahrenheit. They will release enough vapor to form burnable mixtures with air at temperatures below 100 degrees Fahrenheit. Examples include carbon disulfide, ether, acetone, benzene, gasoline, lacquer thinner, alcohol, toluene and turpentine.

Combustible liquids have flash points above 100 degrees Fahrenheit. They must be heated to temperatures greater than 100 degrees Fahrenheit before they will release enough vapor to form burnable mixtures. Examples include fuel oils, kerosene, ethylene glycol, creosote oil, formaldehyde (37% solution), mineral oil, safety solvent, phenol, hydraulic fluid, transformer oil and linseed oil.

Combustion may occur when a combustible liquid comes in contact with a hot surface.

2. Flammable liquids can vaporize and form flammable gas mixtures in the following circumstances:

- When they are left in open containers
- When leaks or spills occur
- When they are heated

3. What determines the degree of danger of the liquid?

- The flash point of the liquid
- The concentration of vapors in the air
- A nearby ignition source, such as:
 - Hot surfaces — hot plates and electric coils, overheated bearings
 - Open flames — pilot lights, smoking materials
 - Hot particles and embers — grinding, welding
 - Sparks — static electricity from rotation belts or transferring liquids, sparks from electrical tools

4. Give an example of how such an incident might occur in your department, using the hazardous materials your employee work with.

5. Fire prevention steps

- Keep liquid vapors confined so they can't mix with air.
- Ventilate the area.
- When liquids are sprayed indoors (e.g., spray painting), ventilated booths or rooms must be used.
- Remove all possible ignition sources.

6. Safe handling and storage

- Follow MSDS suggestions.
- Use the proper equipment to store and handle hazardous liquids (safety cans with spring-loaded closures, covered bench cans, safety disposal cans).
- **Never** use open containers, buckets, cans, tanks and drums to store or handle flammable and combustible liquids.
- Isolate flammable and combustible liquids (if possible) in a special room with fire-resistant walls, doors, ceiling and floors.
- Know the location and operation of the appropriate fire-extinguishing equipment.
- Make sure that all flammable and combustible liquids are properly labeled.
- Keep only one day's supply of flammable and combustible liquids at the worksite; reserve supplies should be kept in a fireproof cabinet or room off-site.
- Use only approved explosion-proof equipment in hazardous locations.

