HAZMAT || Flammable Liquids

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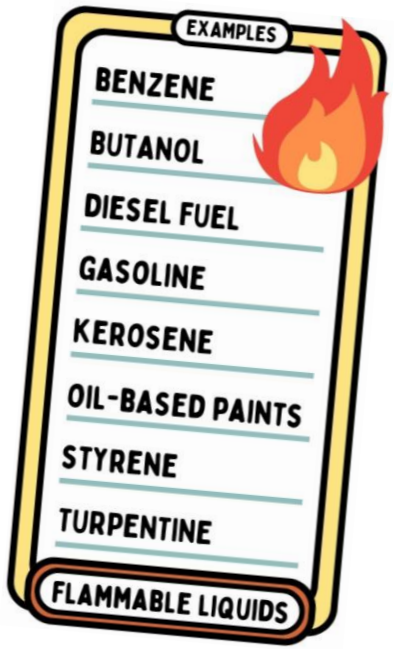
Understanding the hazards of flammable and combustible liquids is crucial for maintaining a safe workplace. The vapor of flammable liquids can easily ignite and cause significant damage if not handled or stored properly.

- Flammable and combustible liquids release vapors and when these vapors mix with air in the right concentration and encounter an ignition source, it can result in a fire or explosion.

Here are the basics when it comes to flammable liquid safety:

1. Always consult the Safety Data Sheet (SDS).
2. It's the vapor, not the liquid, that ignites.
3. Only use approved containers and equipment.
4. Keep containers closed or covered.
5. Ensure potential ignition sources do not come close to flammable liquids.
6. Maintain adequate ventilation and avoid confined areas where vapors can accumulate.
7. While transferring, properly bond and ground containers.
8. Store flammable liquids separately by type and follow storage rules.



OSHA Standard 1926.152(i)(6) *In locations where flammable vapors may be present, precautions shall be taken to prevent ignition by eliminating or controlling sources of ignition. Sources of ignition may include open flames, lightning, smoking, cutting and welding, hot surfaces, frictional heat, sparks (static, electrical, and mechanical), spontaneous ignition, chemical and physical-chemical reactions, and radiant heat.*

While fire is the primary danger, exposure to flammable liquids and their vapors can pose significant health risks through ingestion, inhalation, or direct skin contact.

Wear appropriate PPE when handling flammable liquids.

- Choose PPE based on the specific flammable liquid being handled.
- Wear chemical-resistant gloves when handling flammable liquids.
- Use eye protection like safety goggles or face shields to protect against splashes.

Handling flammable and combustible liquids requires care and caution. Mishandling flammable liquids can lead to spills, vapor releases, chemical splashes on the skin or in the eyes, inhalation of harmful vapors, and other dangers.

- Keep flammable liquid containers closed when not in use.
- Never handle flammable liquids near open flames, ignition sources, or smoking areas.
- Ensure there is good ventilation where flammable liquids are handled.
- Always use grounding and bonding when transferring liquids to prevent static electricity.
- After use, place oily rags and other combustible waste in a covered, fire-resistant container that is labeled. Never leave oily rags in a pile.

OSHA Standard 1926.252(e) *All solvent waste, oily rags, and flammable liquids shall be kept in fire resistant covered containers until removed from worksite.*

Proper storage of flammable liquids is essential to prevent the release of vapors that can ignite and to avoid dangerous reactions with incompatible chemicals.

- Flammable liquid storage areas should be dry and cool with no sources of ignition nearby.
- Only use approved containers for storing flammable liquids. All stored containers should be in good condition, labeled, closed, and properly sealed. Regularly check for leaks.
- The vapors from flammable liquids can be heavier than air and may settle low so adequate ventilation to prevent vapor accumulation is important in storage areas.
- Storage cabinets should be clearly labeled as “Flammable - Keep Fire Away”. Shelves should be sturdy and without gaps to prevent leakage spill to lower levels.
- Doors on metal storage cabinets should have a 3-point lock and be raised at least 2 inches above the bottom of the cabinet.
- Do not store flammable liquids near exits, stairways, or walkways.

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OSHA Standard 1926.152(a)(2) *Flammable liquids shall not be stored in areas used for exits, stairways, or normally used for the safe passage of people.*

- Ensure outdoor containers are in a shaded area, protected from direct sunlight to reduce the risk of overheating.
- In buildings where business is conducted, only store the amount of flammable liquids that are needed for maintenance. Keep these in closed metal containers, safety cans, or a storage room that doesn't open to public areas.

Not all flammable liquids react the same way. Some chemicals are more flammable than others.

- Storage and handling requirements are defined by the characteristics of each flammable liquid which includes the flash point, boiling point, quantity, proximity to other chemicals, and indoor vs. outdoor storage.
- Safety Data Sheets (SDS) will provide the basic information about each chemical.
- Do not begin work with a flammable liquid (or move flammable liquids into storage) unless you have been adequately trained in the proper handling and emergency procedures.

OSHA Standard 1926.152(f)(2) *Leakage or spillage of flammable liquids shall be disposed of promptly and safely.*

If a flammable liquid spills, immediate action is necessary. Isolate the spill area and use appropriate absorbent materials.

- Clean up spills of flammable liquids quickly. Know the location of spill kits and how to use them.
- Wash hands and arms with soap and water immediately following any skin contact with flammable liquids.

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OSHA 1910.106 Table H-12

Maximum Allowable Size of Containers and Portable Tanks for Flammable Liquids				
Container Type	**Category 1**	**Category 2**	**Category 3**	**Category 4**
Glass or approved plastic	1 pint	1 quart	1 gallon	1 gallon
Metal (other than DOT drums)	1 gallon	5 gallon	5 gallon	5 gallon
Safety cans	2 gallon	5 gallon	5 gallon	5 gallon
Metal drums (DOT specifications)	60 gallon	60 gallon	60 gallon	60 gallon
Approved portable tanks	660 gallon	660 gallon	660 gallon	660 gallon

- If unsure or unknown, refer to the SDS to determine the category of the flammable liquid that is being used or stored.

OSHA Standard 1926.152(a)(1) *Only approved containers and portable tanks shall be used for storage and handling of flammable liquids.*

- A safety can is an approved container, 5 gallons or less, with a spring-closing lid and spout cover that is designed to minimize the release of vapors and will safely relieve internal pressure when exposed to fire.

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