

Loss Control Perspectives

Flammable & Combustible Liquids

Simply put, Flammable and Combustible liquids are liquids that can burn. The hazards and threats they pose, however, are anything but simple.



Flash Point



The lowest temperature

where a liquid releases vapor and can ignite is known as a flash point. Flash points differ depending on the liquid, and whether it is flammable or combustible.

Estimated Losses

According to the NFPA, every year flammable and combustible liquids cause:



160,000 fire-related incidents

450 Deaths & 4,000 Injuries

\$1.5 billion in property damage losses



Common Household Items



Examples of flammable & combustible liquids include acetone, ammonia, gasoline, butane and more. They can be found in paints, thinners, waxes, and cleaners.

Flammable Liquids:

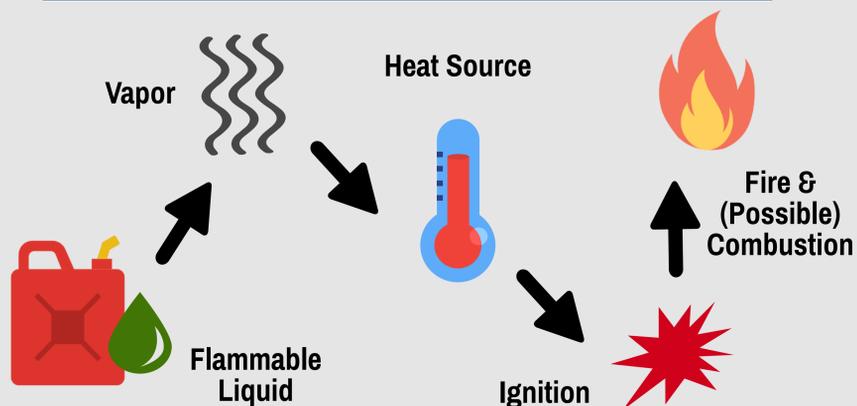
Easy to ignite
Hard to extinguish
Can ignite at room temp.
Don't require outside heat source

Combustible Liquids:

Hard to ignite
Easy to extinguish
Ignite above room temp.
and/or with external heat source

The Process

How do Flammable and Combustible Liquid fires start?



Despite the name, the liquids themselves are not what burns; rather, the vapors accumulated above the liquids!

Famous Cases

1987 Paint Warehouse Fire

\$32M in Damages

Solvents Plant Fire

\$1M in Damages

Classifications

NFPA 30 Classification for Flammable and Combustible Liquids:

Class IA Flammable Liquid	Flash Point <73 °F (22.8 °C), Boiling Point of < 100 °F (37.8 °C)
Class IB Flammable Liquid	Flash Point <73°F (22.8 °C), Boiling Point of ≥ 100 °F (37.8 °C)
Class IC Flammable Liquid	Flash Point ≥ 73 °F (22.8 °)
Class II Combustible Liquid	Flash Point ≥ 100 °F (37.8 °C), and < 140 °F (60 °C)
Class IIIA Combustible Liquid	Flash Point ≥ 140 °F (60 °C) and < 200 °F (93 °C)
Class IIIB Combustible Liquid	Flash Point ≥ 200 °F (93 °C)

Handling & Storage

Proper handling and storage are critical factors in preventing flammable/combustible liquid-related disasters, such as those seen above. Below are some easy-to-apply best practices:

Liquids should be examined for fire point, viscosity, specific gravity, and water miscible.

When being used, flammable liquids should be within safety cans.

Sprinklers, detectors, & ventilation should be up to code, and properly maintained.

Storage drums should be properly grounded.

When not in use, liquids should be stored in flame-resistant flammable storage cabinets.

Heat sources should always be separated to prevent ignition.



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