



## FLAMMABLE LIQUIDS

OSHA Flammable Liquids  
Course: Hours Instruction  
Hours: Class Room  
Hours: Field Instruction

Regulation 29 CFR 1910.106  
Prerequisites:  
Fee:  
CE Credits:

Flammable and combustible liquids play a part in our lifestyle and are present in nearly every workplace. Gasoline, diesel fuel and many common products like solvents, thinners, cleaners, adhesives, paints and polishes may be flammable or combustible. If used or stored improperly, serious fires and death may occur.

To understand flammable liquids it is important to know that it is the vapor, not the liquid that burns. Explosions may occur when mechanics drain a gasoline tank and mistakenly assume it is safe to commence repairs involving welding and/or brazing on the empty tank. However, its vapor space contains gasoline vapors. If the vapor concentration is within the explosive range and a source of ignition is introduced, an explosion will likely occur.

OSHA 29 CFR 1910.106 maintains general requirements for the handling, storage, and use of liquids with a flash point below 200°F ("flammable liquids") in containers, portable tanks, and tank systems as required below for:

- Design, construction, and capacity of flammable or combustible liquid storage units
- Ventilation
- Storage

### Why "Flammable and Combustible Liquids Training" Matters:

- Flammable and combustible liquids can be easily ignited by any of a number of potential sources of ignition.
- Vapors from such liquids can ignite with explosive force.
- Once ignited, flammable and combustible liquids burn readily and give off twice as much heat as a fire burning ordinary combustible material such as paper, cardboard, or wood.
- Fires in which flammable or combustible liquids are involved are very dangerous and difficult to extinguish as the temperature of the fire rises quickly. Billowing clouds of thick black and acrid smoke are produced. Flammable liquid fires also spread rapidly when spilled material flows away from the source.



- Flammable and combustible materials are so common that many people take them for granted and use them carelessly. Understand the hazards and precautions to take to use, store, and handle them safely on the job.

**Flammable liquids** are now divided into four OSHA “categories.” The most stringent regulations cover the most dangerous liquids.

- Category 1 - liquids having flash points below 73.4°F (23°C) and a boiling point at or below 95°F (35°C) (~IA)
- Category 2 - liquids having flash points below 73.4°F (23°C) and a boiling point above 95°F (35°C) (~IB)
- Category 3 - liquids having flash points at or above 73.4°F (23°C) and at or below 140°F (60°C) (~IC and II)
- Category 4 - liquids having flash points above 140°F (60°C) and at or below 199.4°F (93°C) (~III).

### **Who Should Take This Course:**

Anyone dealing with the handling, storage and transportation of chemicals.

### **Course Objectives:**

- Comprehension of Flammable Limits and Flammable Range
- Concentrations of Vapor or Gas
- Container and Portable Tank Storage
  - Container Design, Construction and Capacity
  - Storage Cabinet Design, Construction and Capacity
  - Inside Storage Room Design and Construction - Electrical and Ventilation
  - Storage Inside Buildings - Electrical and Ventilation considerations
  - Storage Outside Buildings - General Warehouses
  - Office Occupancy
  - Fire Control
- **Bulk Plants**
  - Storage and Buildings
  - Loading and Unloading Facilities
  - Electrical Equipment
  - Sources of Ignition and Fire Control
  - Drainage and Waste Disposal
- Safe Transfer and Disposal of Liquids and Containers
- Leakage
- Tank Vehicle and Tank Car - Loading and Unloading

# UNITED SAFETY SOLUTIONS

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- Sources of Ignition
- Electrical Considerations
- Housekeeping and Repairs to Equipment

## **United Safety Solutions Course Covers:**

Employees who complete the course will be prepared to recognize new GHS chemical labels, use revised classification criteria, and read 16-section Safety Data Sheets (SDSs), and comprehend the following:

- Definitions, Warning Signs, Labels and GHS HAZCOM / DOT Pictograms
- Containers, Cabinets and Portable Tank Storage
- Fire Area and Fire Control
- Flash Point
- Combustible Liquid Classes - Common Names and Uses
- Flammable Liquid Classes - Common Names and Uses
- Flammable Explosive Limits
- Storage - Inside and Outside Buildings - Warehouse and Storage Buildings
- Spill Response

The applicable OSHA standard is 29 CFR 1910.106–Flammable Liquids, originally based upon the 1969 version of NFPA® 30 Flammable and Combustible Liquids Code. However, in 2012, OSHA revised 29 CFR OSHA 1910.106, and changed the title of 29 CFR 1910.106 from *“Flammable and Combustible Liquids”* to *“Flammable Liquids”*.

If you are covered by OSHA, you must comply with 29 CFR OSHA 1910.106 – Flammable Liquids. It is recommended that you review both OSHA 1910.106 as well as NFPA® 30 to comply with the standard providing the highest level of protection.

## **Certification:**

Successful completion requires 80% on both classroom and practical skills.

Upon successful completion, participants receive a wallet card, documentation to satisfy OSHA.