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General precautions Protective equipment Proper procedures Cleaning aboveground tanks Cleaning small tanks and containers . Abandonment of tanks

Common Uses of Flammable Liquids 1318
Dip tanks Japanning and drying ovens Oil burners Cleaning metal parts Internal combustion engines Spray booths Gasoline blow torches and plumbers' furnaces Liquefied petroleum gases

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The precautions covered in this chapter are directed to those *industrial operators* who receive, store, handle, and use flammable liquids, and not principally to the *manufacturers* of flammable liquids Because specific characteristics of flammable liquids vary as do their required handling precautions, this chapter does not attempt to cover the subject in all of its many details It does present general information regarding flammable liquids and is intended to provide a broad view of the basic nature of the subject It is advisable to consult federal and state laws, OSHA standards, fire underwriters, the National Fire Protection Association, product trade associations, state and municipal authorities that have jurisdiction, and specific handbooks for detailed information (See "References" at the end of this chapter)

Definitions

As defined by OSHA and the National Fire Protection Association Standard No 30, *Flammable and Combustible Liquids Code,* a flammable liquid is any liquid having a flash point below 100 F and having a vapor pressure not exceeding 40 psia at 100 F (The abbreviation "psia" stands for absolute pressure measured in pounds per square inch Absolute pressure includes the influence of atmospheric pressure—about 14 7 psi—on the measurement If this effect is subtracted, then the measurement is called "gage pressure") Flammable liquids are usually subdivided into classes as shown on the pages immediately following Combustible liquids are those with flash points at or above 100 F Although they do not ignite as easily as flammable liquids, they can be ignited under certain circumstances and so must be handled with caution (Fig 42–1)

The more common flammable and combustible liquids are crude oils, coal tars, various hydrocarbons, alcohols, and their by-products They are chemical combinations of hydrogen and carbon The combination may also contain oxygen, nitrogen, sulfur, or other elements

Manufactured liquids and fluid commodities which contain flammable liquids, such as paints, floor polish, cleaning solutions, driers and varnishes, should be considered flammable liquids and classed according to the flash point of the mixture Precautions incident to their handling and use differ according to their flash points, volatility, and the amount of flammable liquid within the mixture

Flammable liquids vaporize and form flammable mixtures when in open containers, when leaks or spills occur, or when heated The degree of danger is determined largely by the flash point of the liquid, the concentration of vapors in the air (whether the vapor-air mixture is in the flammable range or not), and the possibility of a source of ignition at or above a temperature sufficient to cause the mixture to burst into flame

In the handling and use of flammable liquids, exposure of large liquid surfaces to air should be prevented It is not the liquids themselves which burn or explode, but rather the vapor-air mixture formed when they evaporate Therefore, handling and storing these liquids in closed containers and avoiding exposure of low flash liquids in use are of fundamental importance (Make sure that all containers are correctly labeled)

Chapter 39, "Chemical Hazards," supplies pertinent information on many liquids