

FIRESAFETY

STORAGE AND HANDLING OF COMBUSTIBLE AND FLAMMABLE LIQUIDS

CONTENTS	PAGE
1. GENERAL	1
2. RESPONSIBILITY	1
3. GENERAL RULES	2
4. GASOLINE	2
5. KEROSENE	3
6. OILS—FUEL AND LUBRICANTS	3
7. PAINTS, ENAMELS, VARNISH, SHELLAC, AND ASSOCIATED PRODUCTS	3
8. PETROLEUM SPIRITS	3
9. LIQUEFIED PETROLEUM GAS	3

1. GENERAL

1.01 This section recommends procedures for the use and storage of combustible and flammable liquids which might be used in company-owned and leased buildings.

1.02 Whenever this section is reissued, the reason(s) for reissue will be given in this paragraph.

1.03 Recommendations are based on National Fire Codes, Section 30, entitled "Flammable and Combustible Liquids Code", published by the National Fire Protection Association and Occupational Safety and Health Act (OSHA), Title 29, Part 1910.106.

1.04 The *flash point* of a liquid is the temperature at which it gives off vapor sufficient to form an ignitable mixture with air near the surface of the liquid.

1.05 *Combustible liquids* are those liquids which have a flash point at or above 100°F (37.8°C). Combustible liquids are subdivided:

- (a) Class II liquids have flash points at or above 100°F (37.8°C) and below 140°F (60°C).
- (b) Class IIIA liquids have flash points at or above 140°F (60°C) and below 200°F (93.4°C).
- (c) Class IIIB liquids have flash points at or above 200°F (93.4°C).

Flammable liquids are those liquids which have a flash point below 100°F (37.8°C) and a vapor pressure not exceeding 40 pounds per square inch (absolute) at 100°F (37.8°C) and are known as Class I liquids. Class I liquids are subdivided:

- (a) Class IA liquids have flash points below 73°F (22.8°C) and boiling points below 100°F (37.8°C).
- (b) Class IB liquids have flash points below 73°F (22.8°C) and boiling points at or above 100°F (37.8°C).
- (c) Class IC liquids have flash points at or above 73°F (22.8°C) and below 100°F (37.8°C).

1.06 A *safety can* is an Underwriters' Laboratories listed container of not more than 5-gallon capacity having a spring-closing lid and spout cover. The safety can is designed to safely relieve internal pressure when subjected to fire exposure.

1.07 Storage cabinets for flammable liquids should be constructed as covered in the Flammable and Combustible Liquids Code. Cabinets that meet these requirements are available commercially.

2. RESPONSIBILITY

2.01 All supervisors in charge of any work operations using combustible or flammable liquids are responsible for seeing that regulations

covered in this section are followed by all employees and other craft persons under their control.

2.02 Frequent inspection of the work or storage areas is required to assure compliance with the requirements of this section.

3. GENERAL RULES

3.01 *Class I liquids create a serious fire hazard and are prohibited for use or storage in telephone equipment and administrative buildings.*

3.02 Class II and class III liquids in aggregate amounts exceeding 10 gallons in one area should be stored in **approved** cabinets. Lesser amounts should be sealed tight in original containers or **safety cans** and stored in metal lockers. A common combustible liquid in the class II category is No. 2 diesel oil. Common combustible liquids in the class III category are motor oil, automotive grease, and No. 4 diesel oil.

3.03 Adequate precautions shall be taken to prevent the ignition of flammable vapors. Sources of ignition include but are not limited to: open flames, lightning, smoking, cutting and welding, hot surfaces, frictional heat, static, electrical and mechanical sparks, spontaneous ignition (including heat-producing chemical reactions), and radiant heat. Warning signs prohibiting smoking or any open flame shall be posted in areas where flammable liquids are being stored, used, or dispensed.

3.04 Adequate aisles shall be maintained for unobstructed movement of personnel and in order that fire protection equipment can be brought into any area where flammable or combustible liquids are stored or in use.

3.05 Suitable portable carbon dioxide, dry chemical, or halon fire extinguishers shall be readily available where flammable or combustible liquids are used or stored.

4. GASOLINE

4.01 *The use and storage of gasoline in telephone equipment and administrative buildings are prohibited.*

4.02 It is recommended that storage facilities for gasoline be provided outside of the

building to reduce the handling of gasoline. If portable gasoline powered machinery used for grounds maintenance such as power mowers, snow blowers, etc, are stored inside a telephone building, the gasoline should be drained from the tank into **safety cans** and placed in storage bins or sheds outside of the building (except vehicle storage areas of garages).

4.03 When a truck carries extra gasoline for use in portable gasoline engines, the gasoline carried shall be stored in approved **safety cans**.

4.04 Gasoline shall be dispensed at garages only from listed gasoline pumps. The motor of the vehicle being serviced shall be shut off, and the tank should not be overfilled.

4.05 The recommended location of gasoline storage tanks and dispensing units is covered in Section 760-220-160—Checking Routine—Garages and Garage Work Centers—Project Planning and Design.

4.06 Gasoline shall not be used for washing or cleaning automobile parts, grease spots from garage or workshop floors, or grease from hands or clothes.

4.07 *Gasoline or any flammable liquid shall never, under any circumstances, be dumped into toilet or floor drains.* Where flammable liquids have accidentally entered a drainage system, steps should be taken to minimize the hazard by exhausting the vapors with blowers or exhaust fans while pumping out the liquid. Fans and pumps used in this operation must be equipped with explosion-proof motors. Floor drain openings into buildings in the immediate area should be checked for presence of vapors. Water should be placed in any dry traps to seal them. It is recommended that the fire department be contacted for assistance.

4.08 Catch basins in garages or other buildings where flammable liquids are used or stored, or in areas adjacent to these buildings, shall be inspected monthly for the accumulation of flammable liquids or fumes. Sewers and drains in these areas should also be periodically flushed and cleaned to prevent deposits of organic material and slime growth. Sewer gases resulting from such deposits seldom reach explosive concentrations, however,

when they are mixed with other flammable liquids and gases, explosive conditions may occur.

5. KEROSENE

5.01 The use and storage of kerosene used for fuel as applied to emergency power plants are covered in Section 760-610-400, Considerations for Standby Engines.

5.02 At garages and work centers, kerosene should be stored in underground fuel tanks outside of the building. When this is impractical or requirements are small, kerosene may be stored in a 55-gallon DOT drum inside the building. All dispensing devices must be leak-proof and drip-proof and *listed* by recognized testing laboratories. The storage drum or tank used inside of the garage shall be suitably labeled and located in a position where there is a minimum possibility of it becoming a fire hazard.

6. OILS—FUEL AND LUBRICANTS

6.01 Lubricating oils used in telephone equipment buildings, except that in squirt cans or oilers, shall be stored in their original containers. Where large amounts are required, oil may be stored in 55-gallon DOT drums equipped with an *approved* leak-proof and drip-proof dispensing pump.

6.02 At garages, oil shall be stored in 55-gallon DOT drums or approved storage tanks. All dispensing devices should be approved leak-proof and drip-proof.

6.03 The tanks or drums should be located where there is a minimum possibility of their being damaged by motor vehicles or being a fire hazard.

6.04 The top and sides of oil cans, drums, and oil dispensers shall be maintained free of oil at all times. Oil that is spilled on the floor shall be cleaned up immediately, and the area treated with an approved absorbent. Oily rags and waste shall be deposited in *approved* safety self-closing oil waste cans. The safety waste cans shall be emptied daily and waste stored in sealed containers while waiting for disposal.

6.05 The storage of fuel oils for heating purposes is generally covered by local codes and ordinances. The design and construction of fuel oil tanks is covered in NFPA Pamphlet No. 31.

7. PAINTS, ENAMELS, VARNISH, SHELLAC, AND ASSOCIATED PRODUCTS

7.01 The storage of paints (excluding latex or water base) and associated products in telephone buildings should be kept to minimum quantities required for routine maintenance. Small quantities used for touch-up should be kept in original containers and stored in a flammable-liquid storage cabinet.

7.02 If the use of a paint remover is required in telephone buildings, the nonflammable type shall be used.

7.03 For major jobs, large quantities of paints and thinners constitute a considerable fire hazard. If the job is to extend over a considerable period of time, efforts should be made to ship material to the job in increments to reduce the quantity of paint stored in the building. Storage of paints under such conditions should be closely supervised. It is recommended that all paint materials be placed in *approved* storage cabinets at the end of each work day. An adequate number of fire extinguishers should be readily available in the temporary paint storage area.

8. PETROLEUM SPIRITS

8.01 Storage of KS-7860 and KS-14722 petroleum spirits in equipment rooms should be limited to 1 gallon in an *approved* safety can.

9. LIQUEFIED PETROLEUM GAS

9.01 Storage, transportation, and use of liquefied petroleum (LP) gas in telephone company vehicles are covered in Section 081-330-116—B, C, D, and E LP—Gas Cylinders.

9.02 Where LP gas is used for heating or ignition, the gas cylinder should be stored outside of the building away from the exits. Provisions shall be made for securing the cylinder in an upright position and housing it to prevent tampering and accumulations of ice and snow.

9.03 Using contract services for the maintenance of associated equipment and replacement of gas cylinders is recommended.

9.04 Storage locations shall have at least one 20-BC rated fire extinguisher.