**Flammable Liquids**

**Purpose**

Proper Storage and use of flammable liquids can significantly reduce the possibility of accidental fires and injury to employees. To minimize risk to life and properly, the requirements of NFPA 30 & 321 and OSHA Standard 1910.106 have been implemented. SDS for flammable liquids are kept in the \_\_\_\_\_\_\_\_\_\_ office and at each storage location.

**Responsibilities**

**Management**

1. Provide proper storage for flammable liquids
2. Ensure proper training is provided to employees who work with flammable liquids
3. Ensure containers are properly labeled

**Supervisors**

1. Provide adequate training in the use and storage of flammable liquids
2. Monitor for proper use and storage
3. Keep only the minimum amount required on hand
4. Ensure SDS are current for all flammable liquids

**Employees**

1. Follow all storage and use requirements
2. Report deficiencies in storage and use to supervisors
3. Immediately report spills to supervisors

**Hazard Control**

**Engineering Controls**

1. Properly designed flammable storage areas
2. Ventilated Storage areas
3. Grounding Straps on Drums and dispensing points

**Administrative Controls**

1. Designated storage areas
2. Limiting amount of flammable liquids in use and storage
3. Employee Training
4. Limited & controlled access to bulk storage areas
5. Posted Danger, Warning and Hazard Signs

**Definitions**

**Flammable Liquid** - a liquid with a flashpoint at or below 199.40F. Flammable liquids are divided into four categories as follow.

Category 1 – shall include liquids having flashpoints below 73.40F and having a boiling point at or below 950F.

Category 2 – shall include liquids having flashpoints below 73.40F and having a boiling point above 950F.

Category 3 - shall include liquids having flashpoints at or above 73.4 °F (23 °C) and at or below 140 °F (60 °C). When a Category 3 liquid with a flashpoint at or above 100 °F (37.8 °C) is heated for use to within 30 °F (16.7 °C) of its flashpoint, it shall be handled in accordance with the requirements for a Category 3 liquid with a flashpoint below 100 °F (37.8 °C).

Category 4 - shall include liquids having flashpoints above 140 °F (60 °C) and at or below 199.4 °F (93 °C). When a Category 4 flammable liquid is heated for use to within 30 °F (16.7 °C) of its flashpoint, it shall be handled in accordance with the requirements for a Category 3 liquid with a flashpoint at or above 100 °F (37.8 °C).

When liquid with a flashpoint greater than 199.4 °F (93 °C) is heated for use to within 30 °F (16.7 °C) of its flashpoint, it shall be handled in accordance with the requirements for a Category 4 flammable liquid.

**Substitution**

Flammable liquids sometimes may be substituted by relatively safe materials in order to reduce the risk of fires. Any substituted material should be stable and nontoxic and should either be nonflammable or have a high flashpoint.

**Storage & Usage of Flammable Liquids**

Flammable liquids require careful handling at all times. The proper storage of flammable liquids within a work area is very important in order to protect personnel from fire and other safety and health hazards.

1. Storage of Flammable liquids shall be in NFPA approved flammable storage lockers or in low value structures at least 20 feet from any other structure. Do not store other combustible materials near flammable storage areas or lockers
2. Bulk drums of flammable liquids must be grounded and bonded to containers during dispensing
3. Portable containers of gasoline or diesel are not to exceed 5 gallons
4. Safety cans used for dispensing flammable liquids shall be kept at a point of use.
5. Appropriate fire extinguishers are to be mounted within 25 feet of outside areas containing flammable liquids, and within 10 feet of any inside storage area for such materials.
6. Storage rooms for flammable liquids must have explosion-proof light fixtures
7. Bulk storage of gasoline or diesel are kept in above ground tanks. Tank areas are diked to contain accidental spills. Tanks shall be labeled IAW NFPA guidelines. All tank areas shall be designated no smoking - no hot work - no open flame areas.
8. No flames - hot work or smoking is be permitted in flammable liquid storage areas.
9. The maximum amount of flammable liquids that may stored in a building are

25 gallons of Category 1 liquids in containers

120 gallons of Category 2, 3, or 4 liquids in containers

660 gallons of Category 2, 3, or 4 liquids in a single portable tank.

1. Flammable liquid transfer areas are to be separated from other operations by distance or by construction having proper fire resistance.
2. When not in use flammable liquids shall be kept in covered containers.
3. Category I liquids may be used only where there are no open flames or other sources of ignition within the possible path of vapor travel.
4. Flammable liquids shall be drawn from or transferred into vessels, containers, or portable tanks within a building only through a closed piping system, from safety cans, by means of a device drawing through the top, or from a container or portable tanks by gravity through an approved self-closing valve. Transferring by means of air pressure on the container or portable tanks shall be prohibited.
5. Maintenance and operating practices shall be in accordance with established procedures which will tend to control leakage and prevent the accidental escape of flammable or combustible liquids. Spills shall be cleaned up promptly.
6. Flammable waste material and residues in a building or unit operating area shall be kept to a minimum, stored in covered metal receptacles and disposed of daily.
7. Rooms in which flammable or combustible liquids are stored or handled by pumps shall have exit facilities arranged to prevent occupants from being trapped in the event of fire.
8. Inside areas in which Category I liquids are stored or handled shall be heated only by means not constituting a source of ignition, such as steam, hot water or forces central systems located away from the area.

**Cabinets Maximum Capacity**

Maximum capacity*.* Not more than 60 gallons of Category 1, 2, or 3 flammable liquids, nor more than 120 gallons of Category 4 flammable liquids may be stored in a storage cabinet.

**Containers**

The capacity of flammable containers will be in accordance with the above table.

**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 pt............... 1 qt................ 1 gal...................... 1 gal.**

**Metal (other than DOT drums)..... 1 gal.............. 5 gal............. 5 gal....................... 5 gal.**

**Safety cans.................................... 2 gal............. 5 gal.............. 5 gal....................... 5 gal.**

**Metal drums (DOT specifications) 60 gal......... 60 gal........... 60 gal...................... 60 gal.**

**Approved portable tanks............. 660 gal....... 660 gal......... 660 gal..................... 660 gal.**

**Note: Container exemptions: (a) Medicines, beverages, foodstuffs, cosmetics, and other common consumer items,**

**When packaged according to commonly accepted practices, shall be exempt from the requirements of**

 **1910.106(d)(2)(i) and (ii).**

**Storage Inside Buildings**

Where approved storage cabinets or rooms are not provided, inside storage will comply with the following basic conditions:

The storage of any flammable liquid shall not physically obstruct a means of egress from the building or area.

Containers of flammable liquids will remain tightly sealed except when transferred, poured or applied. Remove only that portion of liquid in the storage container required to accomplish a particular job.

If a flammable liquid storage building is used, it will be a one-story building devoted principally to the handling and storing of flammable or combustible liquids. The building will have 2-hour fire-rated exterior walls having no opening within 10 feet of such storage.

Flammable paints, oils, and varnishes in 1 or 5 gallon containers, used for building maintenance purposes, may be stored temporarily in closed containers outside approved storage cabinets or room if kept at the job site for less than 10 calendar days.

**Ventilation**

Every inside storage room will be provided with a continuous mechanical exhaust ventilation system. To prevent the accumulation of vapors, the location of both the makeup and exhaust air openings will be arranged to provide, as far as practical, air movement directly to the exterior of the building and if ducts are used, they will not be used for any other purpose.

**Designated Flammable Storage Areas are:**

1.

2.

3.