APOLLO INDUSTRIAL SAFETY AND HEALTH PROGRAM

|  |  |  |
| --- | --- | --- |
| Title  FLAMMABLE AND COMBUSTIBLE LIQUIDS | Number  AISH 12 | Revision  03 |
|  | Effective Date  03/22/17 | Page  1 of 6 |

1. **Purpose**
2. To establish the Contractor’s minimum requirements for the safe handling and storage of flammable and combustible liquids. Furthermore, to ensure compliance with the, Federal and State requirements

.

1. **Responsibility**
   1. The Key Supervisor shall be responsible for the following activities:
      1. Ensuring that flammable and combustible liquids are handled, used, and stored in compliance with this procedure.
      2. Ensuring that employees are trained in the safe handling, use, and storage of flammable and combustible liquids.
   2. Apollo Industrial Safety and Health (IS&H) is responsible for providing assistance/guidance in the safe use and storage of flammable and combustible liquids.
2. **Definitions**
   1. **Combustible Liquid**: A liquid having a flash point at or above 100 F (37.8 C).

NOTES: Class II liquids include those having flash points at or above 100 F (37.8 C) and below 140 F (60 C).

Class IIIA liquids include those having flash points at or above 140 F (60 C) and below 200 F (93 C).

Class IIIB liquids include those having flash points at or above 200 F (93 C).

* 1. **Flammable Liquid**: A liquid having a flash point below 100 F (37.8 C) and having a vapor pressure not exceeding 40 pounds per square inch (absolute) (3068 mm hg) at 100 F (37.8 C).

NOTES: Class IA includes those liquids having flash points below 73 F (22.8 C) and boiling points below 100 F (37.8 C).

Class IB includes those liquids having flash points below 73 F (22.8 C) and boiling points at or above 100 F (37.8 C).

Class IC includes those liquids having flash points at or above 73 F (22.8 C) and below 100 F (37.8 C).

* 1. **Flammable Liquid Storage Cabinet**: A cabinet built solely for flammable or combustible liquid storage in accordance with requirements of the NFPA. Cabinets shall be UL listed, FM approved, or acceptable to the Apollo IS&H Department.

1. **General Requirements**
   1. The handling, use, and storage of flammable and combustible liquids shall comply with the following statutory requirements:
      * 1. 29 Code of Federal Regulations (CFR) 1926, Subpart F; Fire Protection and prevention
        2. 29 Code of Federal Regulations (CFR) 1910, Subpart H; Hazardous Materials.
        3. Washington Administrative Code (WAC) 296-155, Part D; Fire Protection and Prevention.
   2. Solvents with the lowest fire hazard and toxic properties should be used.
   3. Users of flammable liquids shall be oriented to practices outlined in this procedure, which shall include the hazardous characteristics of the specific flammable liquids they are using. Safety Data Sheets (SDS’s) will assist with the specific training of the hazardous characteristics.
   4. SDSs shall be kept at each workplace where the flammable/combustible liquid is stored.
   5. The “No Smoking or Open Flames” posting shall be strictly enforced where flammable liquids are being transported, used, or stored.
   6. The use of flammable liquids must be constantly monitored during welding/cutting operations to ensure there are no flammable or combustible hazards in proximity to these operations.
   7. Work efforts (e.g., painting, solvent cleaning of parts, etc.) and work areas where the potential exists for vapor accumulation shall include provisions for engineering and/or administrative controls to preclude vapor accumulation. These provisions shall ensure that the accumulation of flammable vapors does not exceed 10 percent of the lower explosion limit (LEL).
   8. Empty flammable liquid containers generally contain flammable vapor-air mixture and shall be kept away from ignition sources. Apollo safety shall be contacted for product disposal information.
   9. Flammable and combustible liquids shall be stored at least 10 feet away from stairways, elevators, and exits.
   10. Containers shall be properly labeled at all times (see AISH 24).
2. **Procedure**
   1. Receiving and Storage: Flammable and combustible liquids shall be received and stored in Apollo approved open storage areas, or facilities, or in flammable liquid storage cabinets.
      1. An inventory of flammable/combustible liquids shall be maintained.
      2. Storage areas shall be designed to prevent the spread of fire to other areas and have adequate separation distance.
      3. The storage areas shall be posted “Danger Flammable Liquids” and “No Smoking or Open Flames.”
      4. Flammable liquid storage cabinets shall be limited to three cabinets in any one work area.
      5. Flammables and combustibles stored in flammable liquid storage cabinets shall be stored in accordance with the combinations listed below.

|  |  |  |
| --- | --- | --- |
| Flammable  Liquids/Gallons | Combustible  Liquids/Gallons | Total Storage  Capacity/Gal. |
| 60 | 60 | 120 |
| 50 | 70 | 120 |
| 40 | 80 | 120 |
| 30 | 90 | 120 |
| 20 | 100 | 120 |
| 10 | 110 | 120 |
| 0 | 120 | 120 |

* + 1. Maximum container sizes for storing flammable and combustible liquids are listed below. Flammable and combustible liquids shall be initially stored in the original manufacturer’s container unless they are stored in an approved container.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Container  Type | Flammable  Liquids | | | Combustible  Liquids | |
| Class  IA | Class  IB | Class  IC | Class  II | Class  III |
| Glass | 1 pt | 1 qt | 1 gal | 1 gal | 5 gal |
| Metal (other than DOT drums) or plastic | 1 gal | 5 gal | 5 gal | 5 gal | 5 gal |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Container  Type | Flammable  Liquids | | | Combustible  Liquids | |
| Class  IA | Class  IB | Class  IC | Class  II | Class  III |
| Safety Cans | 2 gal | 5 gal | 5 gal | 5 gal | 5 gal |
| Metal Drum  (DOT Spec) | 60 gal | 60 gal | 60 gal | 60 gal | 60 gal |

* 1. Transfer and Use of Flammable Liquids: Flammable liquids shall be transferred into an approved container with flash back screens (if larger than 1 gallon) after the original manufacturer’s container is opened.
     1. Containers shall be kept closed except when transfers are being made.
     2. When transferring flammable liquids between conductive containers, the containers shall be bonded and grounded.
     3. A maximum of one-day’s supply (not exceeding 20 gallons) of flammable liquids may be kept in a work area at one time. The one-day supply shall be returned to the designated storage area at the end of each work shift.
  2. Flammable/Combustible Liquid in Portable Tanks
     1. 5 gallon portable flammable containers shall be metal. No plastic gas cans.
     2. Portable tanks shall be provided with emergency venting and other devices as required by NFPA 30.
     3. Portable tanks shall not be within 150 feet of any buildings unless approved by local fire Marshal.
     4. A minimum 15-foot wide access way shall be provided to permit approach of fire control apparatus to portable tanks.
     5. Storage areas shall be kept free of weeds and debris, and other combustible material not necessary to storage.
     6. At least one portable fire extinguisher having a rating of not less than 20-B:C shall be provided on all tank vehicles or other vehicles used for dispensing or transporting flammable or combustible liquids.
     7. Flammable or combustible liquid tanks used for dispensing shall be diked or double walled to contain the entire contents of the tanks.
     8. Diked areas shall be lined with a minimum of 12mil plastic or equivalent to contain any spilled liquids. The plastic shall be compatible with the liquid to be contained.
     9. Dispensing devices for flammable liquids shall be UL listed. Nozzles shall have dead-man release devices or an approved automatic closing type. Latch-open devices shall be prohibited.
     10. Smoking or open flames shall not be permitted in areas used for fueling, servicing fuel systems, or receiving and dispensing flammable or combustible liquids. Conspicuous and legible signs are posted indicating “No Smoking OR Open Flames,” and “Danger Flammable Liquids.”
     11. Tanks shall be labeled as to their contents.
  3. Emergency Planning
     1. Each flammable/combustible storage area shall have the following emergency equipment in close proximity:

At least one portable fire extinguisher having a rating of not less than 20-B:C shall be located not less than 25 feet and not more than 75 feet from any flammable/combustible liquid storage area.

Adequate spill control equipment including (but not limited to) salvage drums, shovels, and absorbent materials.

Personal protective equipment appropriate for the hazardous materials being stored.

**6.0 Records**

Not applicable

**7.0 References**

FM Approval Guide (Latest Edition)

NFPA 30 Flammable and Combustible Liquids Code

**8.0 Attachments**

Not Applicable