

Flammable and Combustible Liquids

Self-Inspection Checklist




Optional Information

Name of School:
Date of Inspection:
Career-Technical program/course/room:
Signature of inspector:

Guidelines:

This checklist covers the storage and use of flammable or combustible liquids in drums or other containers not exceeding 60 gallons individual capacity. Class I or Class II liquids in fuel tanks, as well as transient inventories of paints and varnishes, and storages exceeding 60 gallons are covered in other checklists.

 Questions marked with this symbol may require the help of an outside expert.

Dispensing and Use

1	Are only approved pumps, drawing from the top of the storage containers, used to transfer flammable liquids? [29 CFR 1910.106(e)(2)(iv)(d) and 29 CFR 1926.152(e)(3 & 5)]
2	Are only approved self-closing valves or faucets used in gravity transfer of flammable liquids from storage containers? [29 CFR 1910.106(e)(2)(iv)(d) and 29 CFR 1926.152(e)(3)]
3	Is air or gas pressure prohibited for transfer of flammable or combustible liquids unless the tank, drum or containers has been approved as a pressure vessel? [29 CFR 1910.106(e)(2)(iv)(d) and NFPA 30]
4	Are containers and portable tanks used for flammable liquids electrically bonded or grounded during transfers? [29 CFR 1926.152(e)(2) and 29 CFR 1910.106(e)(3)(vi)]
5	Are leaks and spills of flammable or combustible liquids disposed of promptly and safely? [29 CFR 1926.152(f)(2)]
6	Are spills of flammable or combustible liquids cleaned up promptly? [29 CFR 1910.106(e)(9)(i)]
7	Is the use of flames or sources of ignition prohibited in areas where flammable vapors may be present? [NFPA 30] <i>Note: 29 CFR 1926.152(f)(3) requires a distance of at least 50 feet between any source of ignition and flammable liquids.</i>



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National Institute for Occupational Safety and Health

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Storage and Use Quantities

8	Is storage of flammable and combustible liquids limited to that required for current activities and maintenance? [NFPA 30]
9	Outside of approved cabinets or storage rooms, are containers of Class I liquids limited to a capacity of one gallon, or two gallons, if safety cans are used? [NFPA 30: 4-5.5.2]
10	Are fewer than 10 gallons of Class I and Class II liquids stored outside of an approved storage cabinet or interior storage room (except in safety cans)? [NFPA 30 4-5.5.3]
11	Are fewer than 25 gallons of flammable liquids stored in safety cans outside of an approved storage cabinet or interior storage room? [NFPA 30: 4-5.5.4 and 29 CFR 1926.152(b)(1)]
12	Are fewer than 60 gallons of Class IIIA liquids stored outside of an approved storage cabinet or interior storage room? [NFPA 30 4-5.5.5] <i>Note: OSHA under 29 CFR 1926.152(b)(1) does not permit more than 25 gallons of combustible liquids stored outside of an approved storage cabinet or interior storage room.</i>

Design and Capacity of Containers

13	Are only approved containers used for storing flammable or combustible liquids? [29 CFR 1910.106(d)(2)(i)] <i>Note: All gasoline must be stored in approved containers.</i>
14	Are flammable and combustible liquid containers stored in accordance with the requirements of Table 1? [29 CFR 1910.106(d)(2)(iii)]

Table 1: Maximum Allowable Size of Containers and Portable Tanks

Container Type*	Flammable Liquids			Combustible liquids	
	Class IA	Class IB	Class IC	Class II	Class III
Glass or approved plastic	1 pt	1 pt	1 gal	1 gal	1 gal
Metal (other than DOT drums)	1 gal	5 gal	5 gal	5 gal	5 gal
Safety cans	2 gal	5 gal	5 gal	5 gal	5 gal
Metal drums (DOT specifications)	60 gal	60 gal	60 gal	60 gal	60 gal
Approved portable tanks	660 gal	660 gal	660 gal	660 gal	660 gal

*Note: Container exemptions: medicines, beverages, foodstuffs, cosmetics, and other common consumer items, when packaged according to commonly accepted practices.

Design, Construction, and Capacity of Storage Cabinets

15	Is storage in cabinets restricted to not more than 60 gallons of Class I or Class II liquids and not more than 120 gallons of Class III liquids? [29 CFR 1910.106(d)(3)(i) and 29 CFR 1926.152(b)(3)]
16	Are all cabinets labeled in conspicuous lettering: "FLAMMABLE-KEEP FIRE AWAY"? [29 CFR 1910.106(d)(3)(ii) and 29 CFR 1926.152(b)(2)(iii)]
17	Are metal cabinets constructed so that the top, sides and door are at least #18 gauge sheet iron and double spaced wall with 1-1/2 inch air space? [29 CFR 1910.106(d)(3)(ii)(a)]
18	Is the door provided with a three point lock and a sill raised at least 2 inches above the bottom of the cabinet? [29 CFR 1910.106(d)(3)(ii)(a)]
19	Are wooden cabinets constructed so that the bottom, sides and top are of approved grade plywood at least 1 inch thick? [29 CFR 1910.106(d)(3)(ii)(b) and 29 CFR 1926.152(b)(2)(I)]
20	Are all wooden cabinet joints rabbetted and fastened in two directions with flat head wood screws? [29 CFR 1910.106(d)(3)(ii)(b) and 29 CFR 1926.152(b)(2)(I)]
21	When more than one door is used on wooden cabinets, is there a rabbetted overlap of not less than 1 inch? [29 CFR 1910.106(d)(3)(ii)(b) and 29 CFR 1926.152(b)(2)(I)]
22	Are no more than three (3) cabinets located in one fire area? [NFPA 30]
23	Are cabinet vents sealed unless vented to the outdoors? [NFPA 30]

Design and Construction of Inside Storage Rooms




24	Are openings to other rooms or buildings from flammable/combustible liquids storage rooms provided with a noncombustible liquid-tight raised sill or ramp at least 4 inches in height? [29 CFR 1910.106(d)(4)(i) and 29 CFR 1926.152(b)(4)(ii)] <i>Note: Alternatively, the floor of the storage area shall be at least 4 inches below the surrounding floor.</i>
25	Are openings to storage rooms provided with approved self-closing fire doors? [29 CFR 1910.106(d)(4)(i) and 29 CFR 1926.152(b)(4)(ii)]
26 	Does storage in inside rooms comply with the requirements of Table 2? [29 CFR 1910.106(d)(4)(ii) and 29 CFR 1926.152(b)(4)(iv)]

Table 2: Storage in Inside Rooms

Fire Protection Provided ¹	Fire Resistance	Maximum Size	Total Allowable Quantities ²
Yes	2 hours	500 sq. ft.	10
No	2 hours	500 sq. ft.	5
Yes	1 hour	150 sq. ft.	4
No	1 hour	150 sq. ft.	2

¹Fire protection system shall be sprinkler, water spray, carbon dioxide, or other system.

²(gals/sq. ft/floor area)

27	Is the room liquid tight where the wall joins the floor? [29 CFR 1910.106(d)(4)(i) and 29 CFR 1926.152(b)(4)(ii)] <i>Note: A permissible alternative to the sill or ramp is an open-grated trench inside the room which drains to a safe location.</i>
28 	Is the electrical wiring and equipment located inside the storage room especially designed to prevent possible ignition of any released flammable vapors? [29 CFR 1910.106(d)(4)(iii) and 29 CFR 1926.152(d)(d)(v)] <i>Note: Anything which looks like normal household wiring including switches, plugs, lighting or any normal equipment such as radios are not permitted.</i>
29	Is every inside storage room provided with either a gravity or mechanical exhaust ventilation system? [29 CFR 1910.106(d)(4)(iv) and 29 CFR 1926.152(b)(4)(vi)]
30 	Does the ventilation system have an exhaust not more than 12 inches off the floor? [29 CFR 1926.152(b)(4)(vi)]
31	Does the ventilation system provide for a complete change of air within the room at least six times per hour? [29 CFR 1910.106(d)(4)(iv) and 29 CFR 1926.152(b)(4)(vi)]
32	If a mechanical exhaust system is used, is the switch located outside of the door? [29 CFR 1910.106(d)(4)(iv) and 29 CFR 1926.152(b)(4)(vi)]
33	Are ventilation equipment and the lighting fixtures operated by the same switch? [29 CFR 1910.106(d)(4)(iv) and 29 CFR 1926.152(b)(4)(vi)]
34	When gravity ventilation is provided, are the fresh air intake as well as the exhaust outlet from the room located on the exterior of the building in which the room is located? [29 CFR 1910.106(d)(4)(iv) and 29 CFR 1926.152(b)(4)(vi)]
35	Is there a 3 foot wide clearance in the aisle in every storage room? [29 CFR 1910.106(d)(4)(v)]
36	Is stacking of 30 gallon capacity containers prohibited? [29 CFR 1910.106(d)(4)(v)]

General Storage Inside and Outside Buildings

37	Is the storage of flammable or combustible liquids prohibited near exits, stairways, or areas normally used for the safe exit of people? [29 CFR 1910.106(d)(5)(I)]
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General Storage Inside and Outside Buildings

38	Is the storage of flammable or combustible liquids prohibited in office areas except that required for maintenance and operation of building and operation of equipment? [29 CFR 1910.106(d)(5)(iii)] <i>Note: Permitted materials shall be stored in safety cans, in closed metal containers inside storage cabinets, or in an inside storage room that does not open into public areas of the building.</i>
39	Are portable fire extinguishers available at locations where flammable or combustible liquids are stored? [29 CFR 1910.106(d)(7) and 29 CFR 1926.152(d)(1)] <i>Note: OSHA requires that at least one portable fire extinguisher having a rating of not less than 20-B units be located not less than 25 feet, nor more than 75 feet, from any flammable liquid storage area located outside.</i>
40	Are containers of flammable and combustible liquids closed when not in use? [29 CFR 1910.106(e)(2)(ii) and 29 CFR 1926.152(f)(1)]
41	Are combustible waste materials and residues kept to a minimum, stored in covered metal receptacles, and disposed of daily? [29 CFR 1910.106(e)(9)(iii)]
42	Are flammable and combustible liquids stored in their original container or in an approved safety can? [NFPA 30]
43	Unless the original container is designed to be used, are flammable or combustible liquids transferred to an approved safety can prior to use? [NFPA 30]
44	Are open flames and smoking prohibited in flammable or combustible liquids storage areas? [29 CFR 1910.106(d)(7)(iii)]
45	Are storage areas for flammable or combustible liquids kept free from combustible materials? [29 CFR 1910.106(d)(iv)]

Definitions

Approved: approved or listed by a nationally recognized testing laboratory.

Class I liquids: flammable liquids (see definition of flammable liquids).

Class I liquids: flammable liquids having a flash point below 73°F and a boiling point below 100°F. Typical Class IA liquids include: acetaldehyde, ethyl ether, methyl ethyl ether, pentane, and petroleum ether.

Class IB liquids: flammable liquids having a flash point below 73°F and having boiling points at or above 100°F. Typical Class IB liquids include: acetone, benzene, butyl acetate, denatured alcohol, ethyl alcohol, gasoline, gin (ethyl alcohol and water), heptane, hexane, isopropyl alcohol, methyl alcohol, methyl ethyl ketone, toluene, and jet fuels.

Class IC liquids: flammable liquids having flash points at or above 73°F and below 100°F. Typical Class IC liquids include: banana oil (isoamyl acetate), butyl alcohol, propyl alcohol, styrene, turpentine, and xylene.

Class II liquids: flammable liquids with flash points at or above 100°F and below 140°F. Typical Class II liquids include: diesel fuel, fuel oils, kerosene, Stoddard solvent, Anchor type car wash, and mineral spirits.

Class III liquids: flammable liquids with flash points at or above 140°F. Class III liquids are subdivided into two subclasses: Class IIIA liquids include those with flashpoints at or above 140°F and below 200°F, except any mixture having components with flashpoints of 200°F, or higher, the total volume of which make up 99% of more of the total volume of the mixture. Class IIIB liquids include those with flashpoints at or above 200°F. This section does not cover Class IIIB liquids.

Class IIIA liquids: flammable liquids with flash points at or above 140°F.

Combustible liquid: any liquid having a flash point at or above 100°F. Combustible liquids are known as Class II and Class III liquids.

Flammable liquid: any liquid having a flash point below 100°F, and have a vapor pressure not exceeding 40 psia (pounds per square inch absolute) at 100°F. Flammable liquids are known as Class I liquids and can be divided into Class IA, IB and IC.

Flash point: the minimum temperature in degrees Fahrenheit at which a flammable liquid will give off sufficient vapors to form an ignitable mixture with air near the surface or in the container, but will not sustain combustion.