Oregon OSHA

FACT SHEET

Flammable Liquids

OAR 437
Division 2/H

Oregon OSHA
A Division of the Department of Consumer and Business Services

osha.oregon.gov

Salem Central Office
350 Winter St. NE
Salem, OR 97301-3882

Phone: 503-378-3272
Toll-free: 800-922-2689
Fax: 503-947-7461

General Information

The general industry standard, 1910.106, Flammable Liquids, is complex and covers many work environments and situations. This fact sheet covers only the basic storage, transfer, and transport requirements. Rules for heavier industrial applications; underground storage facilities; and for building tanks, containers, and other specialized items are in the standard. All references in this fact sheet are to 1910.106 unless stated otherwise. Contact the Oregon Office of State Fire Marshal or your local fire department for additional requirements.

Flammable liquids are divided into categories according to their flashpoints. The following table shows the categories for flammable liquids:

CATEGORY	CRITERIA
1	Flash point < 23°C (73.4°F) and initial boiling point ≤ 35°C (95°F)
2	Flash point < 23°C (73.4°F) and initial boiling point > 35°C (95°F)
3	Flash point ≥ 23°C (73.4°F) and ≤ 60°C (140°F)
4	Flash point > 60°C (140°F) and ≤ 93°C (199.4°F)

Knowing the category plays a role in how to store chemicals. This information may be on the safety data sheet (SDS).

Storage Requirements

Table H-12 in 1910.106 specifies maximum allowable sizes for various types of containers. Section 1910.106(d)(2)(iii) has provisions for glass or plastic containers of up to one-gallon capacity for a category 1 or 2 flammable liquid under specified conditions.

Container volume limits from 1910.106, Table H-12.

CONTAINER TYPE	Category 1	Category 2	Category 3	Category 4
Glass or approved plastic	1 pint	1 quart	1 gallon	1 gallon
Metal (other than DOT drums)	1 gallon	5 gallon	5 gallon	5 gallon
Safety cans	2 gallon	5 gallon	5 gallon	5 gallon
Metal drums (DOT specifications)	60 gallon	60 gallon	60 gallon	60 gallon
Approved portable tanks	660 gallon	660 gallon	660 gallon	660 gallon

Safety cans: Use safety cans that have been approved by the U.S. Department of Transportation (DOT) or a nationally recognized testing laboratory. They may be either metal or plastic and in quantities of five gallons or less.

Cabinets: Do not store more than 60 gallons of category 1, 2, or 3 liquids or more than 120 gallons of category 4 liquids in a storage cabinet. This includes aerosol cans. See additional requirements in (d)(3) of the standard. You must label cabinets "Flammable, Keep Fire Away." Your state or local fire authority may limit you to three cabinets in each fire area. A fire area is a building or part of a building built with a fire rating of at least one hour and areas of pass-through to other parts of the building with fire ratings of at least one hour.

Inside buildings: Rules for storage of flammables inside buildings vary depending on the category of liquid, the type of building, type of occupancy, protection systems (fire sprinklers), types of containers, and other factors. See (d)(5).

INCIDENTAL INSIDE STORAGE	INSIDE STORAGE ROOMS
If you store or use flammable or combustible liquids that are incidental* to the work or process, the following quantities apply when the material (opened or unopened) is not in a specially built storage room or cabinet. See (e)(2).	An inside storage room permits the storage of larger quantities of flammable liquids than other methods. Paragraph (d)(4) has specific requirements for the design and construction of inside storage rooms. It references NFPA standards that you must follow and talks about wiring, ventilation, and the ways to configure stored containers.
Category 1: 25 total gallons in containers **Category 2, 3, or 4:** 120 total gallons in containers **Category 2, 3, or 4:** 660 total gallons in a single portable tank	

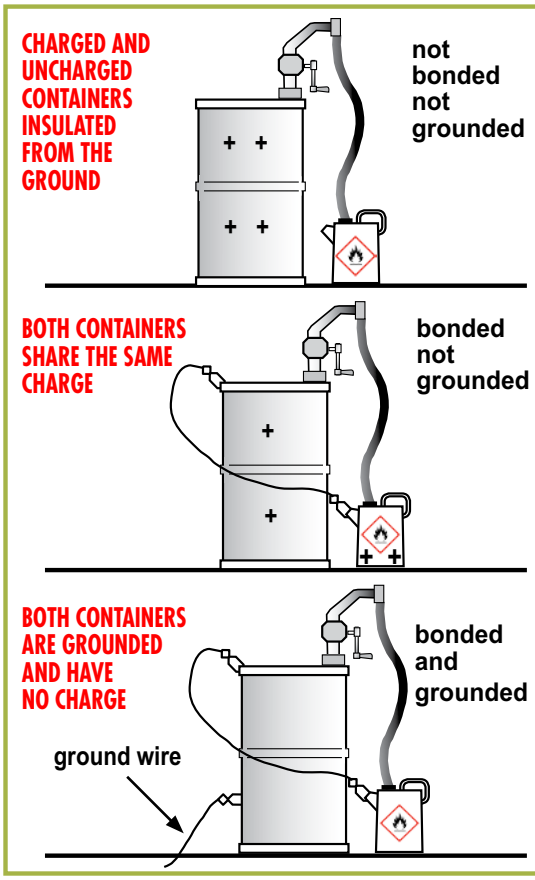
** An example of "incidental to the principal business" use or handling of flammable liquids is a tool manufacturer cleaning parts with flammable degreasing chemicals.*

Outside storage: Rules for storage of flammable liquids outside of buildings vary depending on the category of liquid, types of containers, amount stored, distance from streets and other property, and other factors. See (d)(6).

Transferring Flammable Liquids

Transferring or dispensing flammable liquids often requires special preparation and caution. Moving liquid from one container to another can cause static electricity, increasing the chance of ignition or explosion caused by a spark.

When dispensing category 1, 2, or 3 liquids into portable containers, the containers must be electrically interconnected. **Spray Finishing, 437-002-0107**, also requires bonding and grounding of flammable liquids. The purpose of bonding is to eliminate a difference in the static-electrical charge potential between two or more objects. Use grounding to eliminate a potential difference between an object and the ground. Bonding and grounding are effective only when the bonding objects are conductive materials. Some materials, including some plastics, accumulate static but do not permit effective bonding or grounding because of the inability to disperse the charge. Special instructions for electrical bonding when loading and unloading tank vehicles are in (f)(3)(iv) through (vi) and, for processing plants, in (h)(7)(I).



Transportation and Filling Containers

These Oregon rules are located in Division 2/N, OAR 437-002-2224, Vehicle Drivers and Riders. Never transport flammable liquids in the same part of the vehicle in which people ride.

- For buses, vehicles that carry 16 or more, crew trucks, vans, and passenger cars, use only DOT or UL approved containers that hold five gallons or less and secure them in an area separate from passengers.
- For pickups, flatbeds and other vehicles not listed above, there is no container size limit as long it is not in an enclosed passenger area.

Never fill any container that is not bonded or grounded while it is inside the vehicle, in the pickup bed, or anyplace other than the ground.

Other Points

Fire extinguishers: Paragraph (d)(7) requires fire extinguishers where flammable liquids are stored. This section is a general requirement. Other sections have specific requirements for bulk plants, service stations, and other specialized situations. Find other directions for fire extinguishers in **OAR 437-002-0187, Portable Fire Extinguishers**.

Open flames and smoking: The standard prohibits smoking or open flames in flammable or combustible liquid storage areas. You must post "No Smoking" signs in service stations (filling areas) [(g)(8)] and bulk plants [(f)(6)].

Reactions with other substances: Read the labels, safety data sheets, or both before you store substances near or with flammable liquids. Some substances become unstable or explosive when mixed with flammable liquids. Always follow the manufacturers' instructions on storage compatibility.

Resources

Other standards containing requirements for flammable and combustible liquids include: 3/F, Construction; 4/H, Agriculture, and 7/F, Forest Activities.

Oregon OSHA Rules/Laws, Letters of Interpretations, and Program Directives

OAR 437-002-1910.106, Flammable Liquids

OAR 437-002-0187, Portable Fire Extinguishers

The Standards and Technical Resources Section of Oregon OSHA produced this fact sheet to highlight our programs, policies, or standards. The information is from the field staff, research by the technical resources staff, and published materials. We urge readers to consult the actual rules as this fact sheet information is not as detailed.

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