

**OREGON OCCUPATIONAL SAFETY AND HEALTH DIVISION
DEPARTMENT OF CONSUMER AND BUSINESS SERVICES**

PROGRAM DIRECTIVE

Program Directive A-48
Issued August 10, 1979
Revised November 21, 2014

SUBJECT: Flammable Liquids: Polyethylene Containers

AFFECTED STANDARDS/

DIRECTIVES: 1910.106(d)(2)(i), and OSHA Instruction STD 1-5.14A

PURPOSE: To allow the use of Department of Transportation (DOT) 34 Polyethylene containers for storing flammable liquids at inside storage areas under certain conditions.

BACKGROUND: This program directive is based on the need to resolve the inconsistencies presently found involving the DOT exemptions that permit the shipping of certain liquids in plastic containers. Rule 1910.106(d)(2)(i), prohibits the use of DOT non-metal containers.

However, it has been determined that it is a minimal violation of 1910.106(d)(2)(i) to use the DOT specification polyethylene containers for the storing of flammable liquids at inside storage areas under certain conditions.

- a. The Department of Transportation exemptions, DOT-E 6637 and DOT-E 6787, allow DOT 34 Polyethylene containers of 60 gallons or less to be used for transporting specifically identified Class B poisonous liquids and flammable liquids in motor vehicles, rail freight and cargo vessels. Containers are normally marked on the bottom as meeting DOT 34 specifications.
- b. Tests performed at the U.S. Coast Guard Fire and Safety Test Detachment under the technical control of the Coast Guard Research and Development Center developed the following information:
 - A. Polyethylene drums fail by melting and collapsing into the fire.
 - B. Steel drums fail by jetting or exploding.
- c. The size of the fire had no significant effect on the time of failure for polyethylene drums and an effect could not be determined for steel drums due to inconsistencies in manufacturing. Both types of drums fail within the same length of time when loaded with cargos more volatile than JP-4 aviation fuel. The polyethylene drums fail 3 to 4 minutes sooner than steel drums loaded with fuels in the volatility range of JP-4 or lower.

ACTION:

DOT specification 34 Polyethylene containers may be used in Oregon places of employment if the following conditions are met:

- a. The liquid within the container has a DOT exemption in effect for shipment in polyethylene containers and is identified as meeting the requirements of the DOT exemptions. The Oregon Public Utility Commission can determine whether a container has a DOT exemption.
- b. The container storage area is provided with a fire detection system designed and installed to detect initial or early stage fires and interconnected with an employee emergency alarm system.
- c. In locations where employees are expected to perform fire fighting, the container storage area is provided with a fixed automatic fire suppression system designed and installed to control, if not extinguish, a fire involving the stored polyethylene containers.
- d. Employees will either be totally evacuated from the container storage area at the time of initial fire detection or where fire brigades are provided, trained in the specific methods for fighting fires involving polyethylene drums or containers and in the recognition of hazards associated with such fires.
- e. In general-purpose public warehouses, the container storage area is provided with diking or curbing and drainage that will either:
 - A. Contain the volume of stored liquids and the anticipated flow of fire extinguishing agent; or
 - B. Drain it to a remote impounding area having no employee exposure.

EFFECTIVE**DATE:**

This directive is effective immediately and will remain in effect until canceled or superseded.

History: Issued 8-10-1979 Revised 5-8-2000, 1-23-2013 and 11-24-2014