



CIRSA HAZARD ALERT

Published by the CIRSA Loss Control Department

SAFER TOGETHER

Hazard Alert – Storage of Propane



Entities often store propane tanks indoors ranging in size from 20 pounds to larger cylinders. These may be used for cooking grills, heating road surfaces, forklifts, ground thawing, or other uses. Due to the designed construction of propane cylinders, an explosion caused by physical damage to a cylinder is remote; however, the potential ignition of escaping gas can create a hazard. Propane gas could escape through a damaged or defective valve or hose or through a valve that has not been fully closed on a stored tank. Gas could then be ignited by a spark from a furnace, garage door motor, light switch or even a cell phone.

This article addresses storage of cylinders less than 500 pounds. Although indoor storage of propane is permitted, it is not a best practice and not recommended. Regulations permit 300 pounds (approximately 2,550 cubic feet in vapor form) of propane storage indoors for buildings not frequented by the public. A higher limit exists when the cylinders are stored within special buildings or rooms. Empty containers which have been in LP-Gas (Liquified Propane) service when stored inside, should be considered as full containers for the purpose of determining the maximum quantity of LP-Gas permitted. If cylinders are stored indoors, install, and maintain a UL (Underwriter's Laboratories) listed propane gas detector.

CIRSA HAZARD ALERT

Storage of Propane (cont.)

Tips for safe propane storage:

- Store unused cylinders outside and in an open-air storage cylinder safety cage or cabinet.
- Post a sign at the storage location stating: Propane - No Smoking or Open Flame.
- When a cylinder is not in use, fully close the valve and ensure the safety cap is on over the valve outlet. Protect cylinders from physical damage, rain and direct sunlight.
- Keep the propane at least 20 feet from flammable liquids, highly combustible materials, and similar substances.
- Store away from arcing electrical equipment, open flames, or other sources of ignition.
- Cylinders should not be located near exits, stairways, or in areas intended to be used for the safe entry or exit of occupants.
- Use and store cylinders in the proper orientation (vertical for gas grill cylinders). Forklift cylinders can be used/stored either vertically or horizontally but when horizontal, the relief device must be located at the 12 o'clock position.
- Wear appropriate gloves and other PPE when connecting and disconnecting propane cylinders from their hoses. Propane can cause freezer burn instantaneously.
- Refer to your forklift or other LP powered device training documentation for the proper refueling/changing cylinder procedure.
- Check the cylinder collar date and if it is past the requalification date, return it or work with your supplier to exchange the cylinder.

Leaking Gas

If you smell a strong, unpleasant odor like rotten eggs, skunk spray or dead animal, do the following:

- Extinguish all smoking materials and open flames.
- Avoid operating lights, telephones/cell phones or anything that could generate a spark.
- If indoors, warn others and leave the area immediately. Call 911. Do not return until permitted by proper officials.
- If outside, shut off the leaking gas cylinder if safe to do so or leave the area and call 911.
- Have leaking cylinders properly inspected.

Disposal

- Never use a damaged cylinder or one that has been subject to a fire.
- Do not refill out of date cylinders.
- Do not dispose of propane cylinders with trash or in landfills. Disposal should only be through use of a propane retailer or distributor.

Reference: OSHA 29 CFR 1910.110 Storage and handling of liquefied petroleum gases

<https://www.osha.gov/laws-regs/regulations/standardnumber/1910/1910.110>