

Cylinder Exchange Training Manual

**This manual and training program is provided by
Root Enterprises, Inc. (Class 1)**

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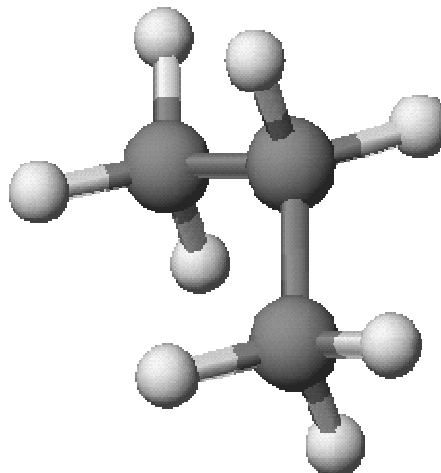
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1. Description and Characteristics of Propane.

What Is Propane?

Propane is a hydrocarbon (C_3H_8) and is sometimes referred to as liquefied petroleum gas, LP-gas or LPG. **Propane is produced from both natural gas processing and crude oil refining, in roughly equal amounts.** It is nontoxic, colorless and virtually odorless. As with natural gas, a strong identifying odor is added so the gas can be readily detected.



In its natural state, propane is an odorless and colorless gas that is widely used to fuel appliances for heating, cooking, and other uses. While propane is used as a gas for fueling appliances, it is transported and stored as a liquid under high pressure in specially designed containers referred to either as tanks or cylinders. When liquid propane changes into a gas vapor, it expands in volume by about 270 times, meaning that propane is very economical to store and transport as a liquid rather than as a gas vapor. However, this characteristic also means that even a small leak of liquid propane can result in a much larger quantity of propane vapor, which can be especially dangerous in a confined space.

Similar to any other flammable gas or flammable liquid, propane is very safe when stored and handled properly. However, if propane is not properly and safely stored and handled, it can cause property damage, injuries, or even death. For this reason, it is important for the safety of the members of your household that they have a thorough understanding of the properties and characteristics of propane, and the hazards and risks associated with its use. Contact Root Enterprises, Inc. with questions you have about propane at 800-845-7070.

Properties and Characteristics of Propane

- In its natural state, propane is an odorless and colorless gas.
- A chemical odorant has been added to propane to give it a distinct smell.
- Propane is stored as a liquid under pressure in tanks and cylinders.
- In most residential applications, propane is used as a vapor.
- If propane comes in contact with your skin, it can result in frost burns.
- Concentrations of propane may cause flash fires or explosions.
- Propane vapor is heavier than air, and it may collect initially at floor levels or in other low areas before it begins to dissipate; therefore, to check for the presence of propane, carefully smell all over a room, especially in low spots.
- Even a slight gas odor may signal a serious propane gas leak, and you should take immediate action if you smell gas or suspect a leak.
- Consult your propane dealer for detailed information about using propane safely.

Know the Odor of Propane

In its natural state, propane is odorless and colorless. A chemical odorant has been added to give a distinct smell to the propane. The purpose of the odorant is to help people detect the presence of propane. It is important that members of the household are able to distinguish the smell of odorized propane. Under certain conditions, a person may be prevented from smelling the odorant such as:

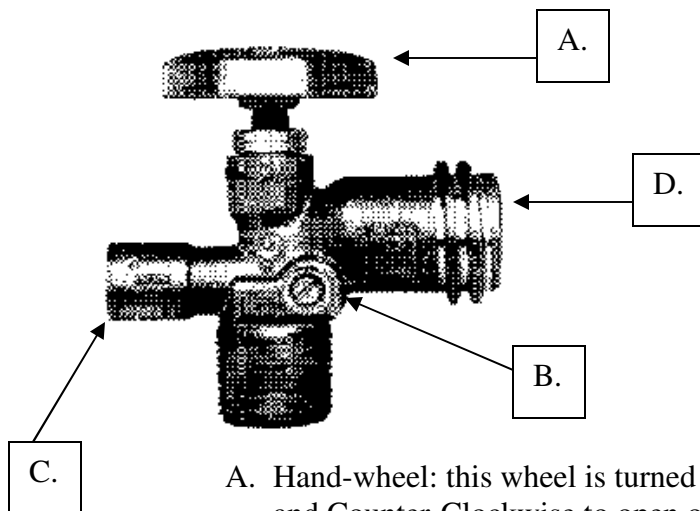
- Colds, allergies, congestion, or other similar medical conditions.
- Use of tobacco, alcohol, and/or drugs.
- Decline in a person's sense of smell.
- Olfactory fatigue from being exposed to the odorant for a period of time.
- Odor masking where strong odors can overpower the smell of the odorant.
- Leaking gas passing through soil may reduce the smell of the odorant.
- The odorant in the propane may not awaken a sleeping person.

Ask your propane dealer to demonstrate the smell of odorized propane and an explanation of the odorant.

2. Cylinders and Appurtenances.



1. Valve: The valve is used for both filling and discharging fuel from the cylinder. It is comprised of a hand wheel, 80% bleeder, relief valve and discharge outlet.
2. Top ring: This is used to protect the valve from impacts and accidental opening during transport.
3. Body: This is the actual vessel containing the liquid propane gas.
4. Foot Ring: A ring is attached to the bottom of the cylinder body to hold the cylinder in an upright position.



- A. Hand-wheel: this wheel is turned Clockwise to Close the supply of fuel and Counter-Clockwise to open or discharge fuel.
- B. 80% Bleeder: This outage bleeder valve is only used during the filling process and should be closed at all times.
- C. Relief Valve: The purpose of this valve is to relieve excess pressure due to extreme heat or possible overfilling. If you hear a hissing sound coming form this valve, DO NOT put your hand over the opening to see of that is where it is coming from. This could result in injury.
- D. Discharge Outlet: This outlet is fitted for both the old style screw in fitting and the new style screw over fitting for filling and discharge of fuel.

3. Transportation of Cylinders

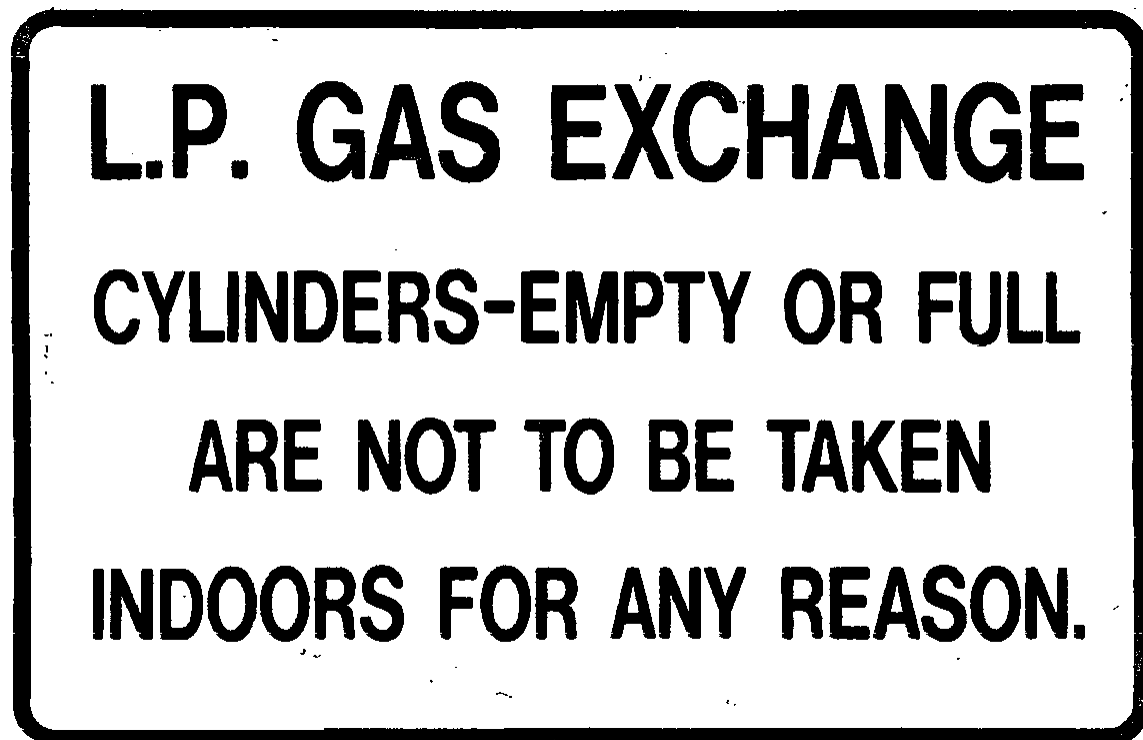
Cylinders will be stored in the upright position when transported. Closed bodied vehicles such as passenger cars, vans and station wagons shall not be used for transporting more than 90lbs of LP-gas but not more than 45 lbs LP-gas per container, unless the driver's and engine compartments are separated from the cargo space by a vapor-tight partition which contains no means of access to the cargo space. (NFPA 58 6-2.2.5)

4. Moving and Installation of Cylinder Racks

All racks are to be installed per the Kansas State Fire Marshal Once in place, no rack is to be moved or removed from their original position without notifying the Class 1 Supervisor for approval. Moving of racks without prior approval will result in suspension and the Kansas State Fire Marshal will issue a cease and desist order for your location. All racks should be located at least 10' from any single entry building and 5' from any doorway in a building having 2 entry ways per NFPA 58.

5. Storing or Taking Cylinders Indoors

Cylinders are to be stored in locked racks and located as to be outside. Under no circumstances are cylinders to be taken indoors. (Exception: Only new, unused cylinders, which have never been filled, are allowed to be stored indoors.) Each entry door to your business will have the following sign affixed.



6. Storage of LP Cylinders

Location of storage for Lp Cylinders awaiting use or resale, shall be located at least 5 feet from any doorway in a building frequented by the public, nearest building or group of buildings, line of adjoining property that may be built upon, busy thoroughfares or sidewalks, line of property occupied by schools, churches, hospitals, athletic fields, or other points of public gathering, or fuel dispensing stations. (NFPA 58 5-4.1)

Containers at a location open to the public shall be protected by either an enclosure in accordance with 3-3.6(a) or a lockable ventilated metal locker or rack that prevents tampering with valves and pilferage of the cylinders. (NFPA 58 5-4.2.1)

Protection from vehicle impact shall be provided in accordance with good engineering practice where vehicle traffic normally is expected at the location. (NFPA 58 5-4.2.2)

Storage locations shall provide at least one approved portable fire extinguisher having a minimum capacity of 18lb dry chemical with a B:C rating. (NFPA 58 5-5)

7. Who can Handle Cylinders for Exchange?

Cylinders may only be handled by the Dealer supplying the rack and those authorized and trained whose name appears in the listing on the last page of this book. Unauthorized persons handling cylinders will result in suspension resulting in a cease and desist order being issued by the Kansas State Fire Marshal.

8. Hazards and Distances from Combustibles

Cylinders for Exchange are classified as Hazardous Materials and should be treated as such. Leaking Lp-gas is heavier than air and may pocket next to the ground. In such an event, any type of ignition source may cause a fire or explosion. Great care is to be used to insure that all cylinders empty or full have the valves closed and is not leaking. Smoking is not permitted within 5 ft of exchange cabinets. Cylinder exchange cabinets shall also be located 5 ft from any source of ignition such as soft drink and ice machines, exhaust fumes, air conditioners, or telephones.

9. Emergency Procedures for Leaking Cylinders

If you smell gas or hear a hissing sound, immediately remove the suspect cylinder and take it to a safe location as specified by the responsible supervisor. Upon removal to a safe location, contact the Class 1 supplying the exchange rack for further instructions or pick up information. Safety of personnel and the general public are of the up-most importance.

10. Accidents and Reporting

In the event of an accident, you must protect the scene. Immediately contact the Supervisor and describe the events. The Supervisor is to contact the Class 1 supplying the cylinder exchange rack and give details pertaining to the accident. The Class 1 will instruct you as to further steps necessary.

11. Class 7 Licensing Requirements

Each Cylinder Exchange location is to have a Class 7 License. The Class 1 supplying the exchange rack will provide the necessary applications and training. All employees that are to handle the cylinders in the exchange rack are to be trained in the safe handling of cylinders as described in this manual.

12. Enforcement of the Kansas Rules & Regulations

The Kansas State Fire Marshal is the authority having jurisdiction in the State of Kansas. This Commission administers enforcement of the current rules and regulations.

13. Description of Training Provided Employees covered by the Class 7 License.

Training will be provided by the Class 1 supplying the exchange rack and will consist of the information printed in this manual as well as verbal instruction and question answers. If an employee is unsure as how to handle any situation, they are instructed to contact the Class 1 supplying the exchange rack at 1-800-845-7070 or 1-580-472-3115.

I agree that by signing this manual I am aware of the following:

1. Characteristics of propane.
2. Smell of Propane.
3. How to check for leaks.
4. Knowledge of the emergency plan.
5. Who to notify in case of an emergency.

Do not take these types of cylinders.



Cylinders that are rusted dented or have damage to the top or bottom rings should not be accepted into the exchange program.



This is a Freon Bottle and should NOT be accepted



This cylinder has had something other than LP in it and is evident by the discoloration of the valve.

