



Safety Information for Commercial and Industrial Propane Users

- 1 **Employer Responsibilities**
- 2 **What to Do If You Suspect a Leak**
- 3 **Propane Appliance & Equipment Maintenance**
- 4 **Carbon Monoxide Safety**
- 5 **Propane on Job Sites**
- 6 **Portable Propane Cylinders**



Use this pamphlet to help inform your employees on propane safety.

1

Employer Responsibilities



Employer Responsibilities

USE THIS PAMPHLET TO HELP INFORM YOUR EMPLOYEES ABOUT PROPANE SAFETY

This information, along with materials such as safety data sheets, cylinder labeling, and resources at propane.com, can be used as you develop employee training.

This pamphlet should not be the only means for training your employees about propane.



YOUR ORGANIZATION MUST MEET CERTAIN REGULATORY REQUIREMENTS

Most commercial users of propane must conform with the *OSHA Hazard Communications Standard 29 CFR 1910.1200*. There may also be other federal, state, or local requirements applicable to your location or industry. Even if the requirements do not apply to your situation, they can provide useful guidance for safety.

When conforming with the *OSHA Hazard Communications Standard 29 CFR 1910.1200*, employers must:

- Develop and maintain a written hazard communication program (HazCom) for your workplace.
- Maintain lists of hazardous chemicals present in your workplace.
- Review labeling on containers of chemicals in the workplace.
- Maintain and make available safety data sheets (SDSs) to employees.
- Develop and implement employee training regarding hazards of chemicals and protective measures.

You **MUST** include propane in your organization's HazCom Program and provide safety information about the use of propane.

Include Propane Safety in Your Emergency Action Plan (EAP).

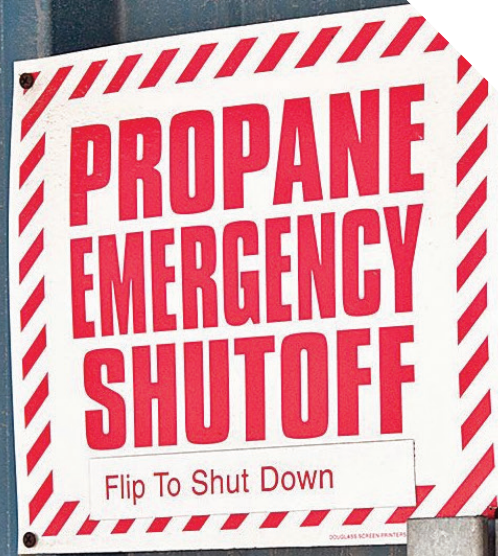
An EAP is required by OSHA. See [osha.gov/etools/evacuation-plans-procedures/eap](https://www.osha.gov/etools/evacuation-plans-procedures/eap) for more about EAPs. Address topics such as propane odor and leaks, fire involving propane, and severe weather and natural disasters.

2

What to Do If You Suspect a Leak

A propane gas leak is an emergency. It can result in fire and explosion.

Be prepared to respond.



If You Suspect a Gas Leak

Follow your company's **Emergency Action Plan** for responding to a gas leak. Some basic rules to follow when responding to a gas leak include:

1 GET AWAY IMMEDIATELY

Get everyone out of the building or area where you suspect a gas leak.



2 AVOID CREATING SPARKS

As you leave, avoid igniting the leaking gas. Some devices, appliances, and equipment can create sparks when manipulated.



- DO NOT turn any light switches **on or off**.
- Do not interact with any appliances, equipment, outlets, or landline phones.
- No smoking, vaping, or open flames.

3 STAY AWAY AND REPORT THE LEAK

Once safely away, call your propane supplier, 911, or the fire department. Stay away from the suspected gas leak until your propane supplier, emergency responder, or qualified professional determines that it is safe to return.



Follow your organization's **Emergency Action Plan (EAP)** for turning off the gas supply.



Before using the propane system again, have it repaired and leak checked by the propane supplier or a qualified professional.



Indicators of a Gas Leak

PROPANE ODOR

A unique odor is added to propane to help alert people to a leak. Make sure everyone in your workplace knows what propane odor smells like. As new personnel join your organization, make sure they know as well. If you do not know what propane smells like, you can ask your organization's propane supplier for a sniff of the gas.



If you smell a bad odor and are not sure of the source, it may be a gas leak. Take action!

PROPANE GAS DETECTOR ALARM

Propane gas detectors can identify leaks even when propane is not smelled. *See page 7 to learn about propane gas detectors.*

SOUND OF HISSING GAS

A hissing sound may indicate that gas is escaping from a component of the propane system or appliance.

UNUSUAL USAGE

If you are using more gas than you expect, there may be a leak.

Signs of a **leaking propane cylinder** may include propane odor, hissing gas, visible cloud of propane, or flames at the cylinder.

You Might Not Smell a Gas Leak if:

The propane odor does not get to your nose.

- The propane odor may be present in an area where there are no people, such as a basement, attic, crawl space, or unoccupied room or building.
- Because propane is heavier than air, it may settle near the floor.
- Airflow may move or disperse the propane odor.

OR

Your ability to notice the odor is reduced. *Reasons may include:*

- A cold, allergies, sinus congestion, or other medical condition.
- Tobacco, alcohol, or drug use.
- Being older.
- Being asleep.
- “Odor fatigue.” This could occur when the propane odor is present for a period of time and your nose “gets tired” and you no longer smell it.
- Other strong smells (such as tobacco smoke and other workplace odors, odors from cooking, animals, fertilizer, chemicals, or musty or damp smells) masking propane odor.

OR

Propane has lost its odor.

The odor that is added to propane can sometimes be absorbed by substances such as soil, water, or rust, making it more difficult to smell (“odor loss”).



**EMPLOYERS HAVE
AN OBLIGATION TO
IDENTIFY EMPLOYEES
IN THE WORKPLACE
WHO ARE NOT ABLE
TO SMELL PROPANE.**

Install Propane Gas Detectors

Propane gas detectors can identify leaks you do not smell. Use flammable gas detectors that sense propane, and always follow the manufacturer's instructions for installation, use, and care.

NOTE: Propane gas detectors are different from smoke detectors and carbon monoxide detectors, although some combination detectors are available.

Respond immediately to a propane leak.

If the alarm sounds, do not go toward the alarm. Treat it as an emergency and act immediately, even if you do not smell propane odor.

NEVER ignore the smell of propane odor, even if your propane gas detectors do not alarm.



3 Propane
Appliance
& Equipment
Maintenance



If Your Fixed Propane Container Runs Out or Is Shut Off

If you suspect your fixed propane container has run out, immediately alert the person at your organization who is responsible for contacting the propane supplier in this situation.

A qualified person must check the propane system for leaks when turning the gas on.

Never turn the gas on at the propane tank yourself.

Any time there is an interruption in your propane supply, the piping system must be tested for leaks in accordance with NFPA guidance or any applicable codes. If your state allows your organization to reinstate gas service internally, ensure that this leak check is performed on the entire system. If your state does not allow or you do not have the capabilities internally, contact a qualified professional such as your propane supplier.

Be sure any pilot lights are properly re-lit as soon as the gas is turned back on.

HOW CAN I AVOID RUNNING OUT OF GAS?

Check the fuel gauge on your propane tank periodically.
Discuss delivery options and timing with your propane supplier.



Lighting Pilot Lights

Lighting or troubleshooting pilot lights improperly can cause fire and explosion.



WHAT IS A PILOT LIGHT?

Some propane appliances use a small, constantly burning flame, called a pilot light, to ignite the main burner when needed. Check the appliance or equipment manufacturer's information to find out if it has a pilot light.

WHY DO PILOT LIGHTS GO OUT?

- If you run out of gas or turn off the gas to an appliance.
- Too much or not enough ventilation.
- A problem with the appliance or propane system.

IMPORTANT GUIDANCE FOR EMPLOYERS

If employees are not trained, contact a qualified professional to relight pilot lights on propane appliances and equipment.

A QUALIFIED PROFESSIONAL CAN SAFELY LIGHT PILOT LIGHTS AND ADDRESS PROBLEMS.

IF EMPLOYEES LIGHT PILOT LIGHTS:

- Employees must be properly trained on how to relight pilot lights in accordance with the equipment manufacturer's instructions.
- If you suspect a gas leak, do not attempt to light.
- If a pilot light is difficult to light or repeatedly goes out, **NEVER try to fix or troubleshoot the problem yourself.** Never try to bleed the gas line – you will release gas. Contact a qualified professional to evaluate the equipment.



When to Use a Qualified Professional

Safety codes in every state require a “qualified person” for certain tasks.

A “qualified person” is experienced, familiar with required precautions, and complies with all requirements.

Never try to install, modify, or repair your propane system, appliances, or equipment.

Improper installation or service of propane appliances or equipment can result in a gas leak, fire, explosion, and serious injury or death.



USE A QUALIFIED PROFESSIONAL:

For installations and service, such as:

- Any service or changes to the gas distribution system, including tanks, cylinders, pipes, and their components.
- Installing, disconnecting, or relocating a propane appliance.
- Replacing, installing, or inspecting propane appliance connectors.

For scheduled maintenance – when your appliance manufacturer’s maintenance schedule indicates service is due.

If there is a problem, such as:

- Propane appliances, equipment, or system not operating properly.
- Problems with your pilot lights.
- Soot buildup on equipment. (This may indicate gas is not burning completely.)
- Evidence of blocked vents (for example, from nests, snow, or ice) that you are unable to clear.

If you run out of gas or if the gas is shut off.

Maintain Your Propane Appliances and Equipment



FOLLOW MAINTENANCE SCHEDULES

All appliances and equipment using propane must be maintained properly in order to operate safely, properly, and efficiently. Only a qualified professional has the proper training to install, service, maintain, and repair your appliances and equipment.



Contact a qualified professional to inspect your propane appliances in accordance with the manufacturer's instructions and schedule or state and local requirements. For example, furnaces are often checked before each heating season begins.

BE SURE YOUR APPLIANCES AND EQUIPMENT CAN "BREATHE" PROPERLY

Appliances and equipment need air for proper combustion, and exhaust gases need to flow to the outdoors. Ventilation problems can result in high carbon monoxide levels in the area (*see page 17*).

- Keep the area around appliances and equipment clear to be sure plenty of air can reach the burner for proper combustion.
- In wintry weather, keep the area around vents clear of snow and ice.
- Check vents for obstructions such as insect, bird, or small animal nests. Call a qualified professional if you see evidence of blockages.

Never store anything that can burn (such as paper, clothing, gasoline, or solvents) near appliances.



WATCH FOR SOOT BUILDUP

If you notice any soot (for example, on an appliance, vent, or heating register), the gas may not be burning completely, which can cause higher levels of carbon monoxide. Contact a qualified professional.



Keep Flammable and Combustible Gases, Vapors, and Liquids Away from Propane Appliances and Equipment



Flammable or combustible gases and vapors from cleaning fluids, paint thinners, gasoline, and other flammable or combustible liquids can be ignited by propane appliances and equipment. Follow the manufacturer's instructions and regulatory requirements for safe use and storage.

Flammable or combustible gases and vapors may travel along the ground and collect in low or confined areas, or follow air currents to higher levels in a building. Appliances and equipment can also draw in flammable or combustible gases or vapors as they draw in air during operation.

Getting a New Propane Appliance or Equipment

BE SURE THE APPLIANCE OR EQUIPMENT IS SUITABLE FOR USE WITH PROPANE

When selecting a new appliance or equipment, make sure it is designed for use with propane. Some natural gas appliances or equipment can be converted to use propane by a qualified professional.

Have the appliance or equipment installed by a qualified professional.



GAS CAN LEAK THROUGH AN OPEN GAS LINE

Plan ahead! If an appliance or equipment is going to be disconnected from a gas line, even if you will not be installing a new appliance, a qualified professional must cap or plug the open gas line.

If you become aware of an open gas line, contact a qualified professional to cap or plug the open gas line.

Properly Install and Maintain Appliance Connectors



WHAT IS A PROPANE CONNECTOR?

A propane connector is the flexible tubing that serves as the final section of the propane system that brings gas to your appliances or equipment. Connectors must be specifically designed for use with propane appliances or equipment. Connectors that are improperly installed or that are damaged can leak gas.

PROFESSIONAL INSTALLATION, MAINTENANCE, AND REMOVAL REQUIRED

- Have appliances and equipment installed by a qualified professional.
- Do not install, loosen, or disconnect appliance connectors yourself. All propane connectors must be properly installed, inspected, maintained, and disconnected by a qualified professional.
- Over time, some types of propane connectors can crack or break, resulting in a gas leak. A qualified professional can inspect propane connectors to be sure they are safe and meet current code requirements.

AVOID STRESSING CONNECTORS

- Connectors can crack or break when flexed or twisted, such as when an appliance is moved. Use care near connectors, such as when cleaning. If you damage a connector, turn off the gas and contact a qualified professional.
- Appliances that are installed on wheels or casters must have a restraint installed to avoid stretching the appliance connector.

Bad Weather: Prepare and Protect Your Propane System

PREPARING FOR EXTREME WEATHER

Employers generally have an Emergency Action Plan covering the safe operation of propane systems and equipment before, during, and after a natural disaster.

ACTIONS TO TAKE

Many Emergency Action Plans include additional resources addressing how to manage weather-related events such as flooding, heavy snow, or ice. Employers should refer to the Emergency Action Plan in the event of a natural disaster or other severe weather event.



WHAT IF SOMETHING DOES NOT LOOK RIGHT AFTER A STORM?

Never enter an area if you suspect a gas leak. If you observe that:

- A container has shifted position,
- Gas lines are crushed, kinked, broken, or damaged, or
- Anything about the system or an appliance seems unusual.

Follow your organization's EAP for turning off the main gas supply valve at the container, if it is safe to do so. Then contact your organization's propane supplier or a qualified professional.

CLEARING SNOW

Snow and ice can damage system components, causing a gas leak. It can also block ventilation, causing high carbon monoxide levels inside buildings.

- Keep heavy snow and ice off of propane piping, regulators, and meters. When clearing snow, be careful to avoid damaging components. For example, use a broom rather than a shovel.
- Keep the area around appliance or equipment vents clear of snow and ice so they can take in fresh air and vent out exhaust gases properly.

Also, clear the walkways and areas around containers so that propane suppliers have ready access to your container.

NEVER TRY TO HEAT UP A PROPANE CONTAINER

NEVER try to keep propane storage cylinders or tanks warm by applying an external heat source. If you are having problems with your propane system in extreme cold, contact your propane provider for advice.

See [propane.com/safety](https://www.propane.com/safety) or contact your organization's propane supplier for more propane safety information relating to natural disasters and severe weather.



4

Carbon Monoxide Safety



Carbon Monoxide Can Be Deadly. Be Prepared To Respond.

WHAT IS CARBON MONOXIDE (CO)?

Carbon monoxide is a poisonous gas that is colorless, odorless, and tasteless. High levels of carbon monoxide can cause brain damage or death. Young children, the elderly, people with heart disease, and those under the influence of alcohol, drugs, or medication are particularly susceptible to carbon monoxide poisoning.

WHERE DO UNSAFE LEVELS OF CARBON MONOXIDE COME FROM?

Unsafe levels of carbon monoxide can be generated by appliances or equipment that is defective or improperly installed, operated, or maintained, or has air intakes blocked. Carbon monoxide can also enter a building if an appliance venting system or chimney becomes blocked (for example, by a bird's nest).

IF YOU SUSPECT CARBON MONOXIDE IS PRESENT

1 LEAVE IMMEDIATELY

Everyone should get out of the building or affected area and away from where carbon monoxide is suspected.



2 FOLLOW YOUR COMPANY'S EAP OR CALL 911 OR THE FIRE DEPARTMENT

Once safely away, call 911 or the fire department to report the presence of carbon monoxide.



3 STAY AWAY

Stay away from the suspected carbon monoxide until an emergency responder or other qualified professional tells you it is safe to return.



IMPORTANT GUIDANCE FOR EMPLOYEES

If you witness someone who has potentially been overcome by carbon monoxide, exit the area and follow your organization's Emergency Action Plan (EAP) or alert emergency responders. Do not attempt to rescue them without appropriate training and personal protective equipment.

Indicators That Unsafe Levels of Carbon Monoxide May Be Present

CARBON MONOXIDE DETECTOR ALARM

Carbon monoxide detectors sound an alarm when they sense excessive levels of carbon monoxide in the air.

EXPERIENCING PHYSICAL SYMPTOMS

Exposure to high levels of carbon monoxide can cause symptoms like:

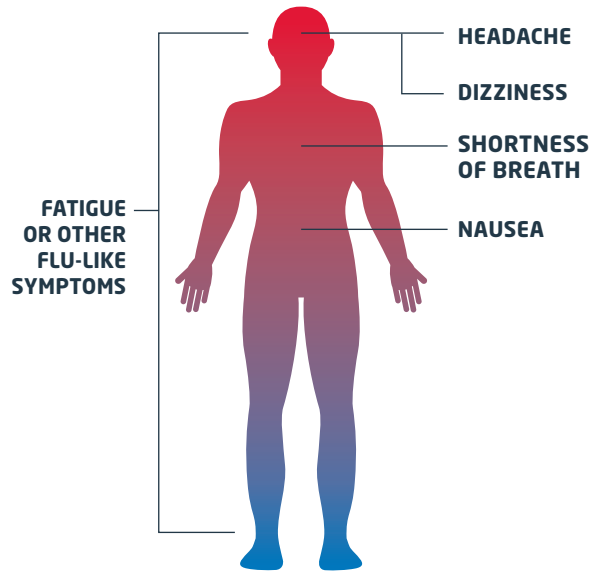
- Fatigue
- Nausea
- Dizziness
- Headache
- Shortness of breath
- Other flu-like symptoms

IMPROPER APPLIANCE OR EQUIPMENT OPERATION

Unsafe levels of carbon monoxide can be created when fuels are not burning properly or appliances/equipment are malfunctioning. Signs that this might be happening include:

- Soot, especially on appliances/equipment and vents
- Unfamiliar or burning odor
- Increased moisture inside windows

SYMPTOMS OF CARBON MONOXIDE POISONING INCLUDE:



To Reduce the Risk of Carbon Monoxide (CO) Poisoning:

USE CARBON MONOXIDE DETECTORS

Carbon monoxide detectors sound an alarm when they sense excessive levels of carbon monoxide in the air. (Carbon monoxide detectors are different from smoke detectors and propane gas detectors, although some combination detectors are available.)

Install a UL-listed carbon monoxide detector on each level of your building. Follow the manufacturer's instructions.

HAVE PROPANE APPLIANCES AND EQUIPMENT CHECKED ON SCHEDULE

Have a qualified professional check propane appliances and equipment in accordance with the manufacturer's instructions and schedule. For example, furnaces are often checked before each heating season begins.

KEEP CHIMNEYS AND INTAKE AND EXHAUST VENTS CLEAR:

- Regularly check appliance and equipment air intake and exhaust vents to be sure that air can flow in for the gas to burn properly and exhaust gases can flow easily to the outdoors.
- Keep vents and chimneys free of debris such as leaves and animal nests. In winter, keep them free of snow and ice.

POSITION AND USE VENT-FREE APPLIANCES CORRECTLY

Always follow the manufacturer's instructions for placement and use of vent-free appliances, including fireplaces and logs.

HEAT ENCLOSED AREAS WITH APPLIANCES INTENDED FOR INDOOR SPACE HEATING

- Never use portable heaters indoors, unless they are designed and approved for indoor use.
- Never use a gas oven or range-top burners to provide space heating.
- Never use a barbecue grill (propane or charcoal) indoors for heating or cooking.

When running internal combustion engines indoors, make sure the equipment is designed for indoor use and follow the manufacturer's instructions.



WATCH FOR SIGNS

that appliances or equipment might be operating improperly.



5

Propane on Job Sites



Propane Container Placement

There are specific codes and regulations for the proper location and positioning of containers. In addition, the local Authority Having Jurisdiction, general contractor, or propane supplier may have additional requirements for container placement and if it must be secured. Permitting may be required.

- Your propane supplier can ensure propane container distance requirements are adhered to when installing a propane container.
- Consult the local Authority Having Jurisdiction to ensure compliance with federal, state, and local safety codes.



MOVING CONTAINERS

As a project progresses, if distances change, you may be required to move your propane container. If your ASME tank must be moved, contact your propane supplier.

Preventing Container Damage & Tampering

Propane containers can be damaged by moving equipment and materials on job sites. If a propane container is dented, turn off the gas supply valve and contact your propane supplier, who can thoroughly inspect and replace the container if necessary.

- Store portable cylinders and ASME containers upright on a flat, stable, and fireproof base.
- Portable cylinders and containers may need to be secured with an anchoring system.
- Consider crash protection to prevent damage from vehicles.
- Cylinders should have caps and collars.



WHAT IF SOMETHING DOES NOT LOOK RIGHT?

Never enter an area if you suspect a gas leak. If you observe that:

- A container has shifted position,
- Gas lines are crushed, kinked, broken, or damaged, or
- Anything about the system or an appliance seems unusual,

follow your organization's EAP for turning off the main gas supply valve at the container, if it is safe to do so. Then contact your organization's propane supplier or a qualified professional.

Using Propane Heaters Indoors

Propane heaters not only keep the space warm so your crew can work safely and efficiently, they can also remove air moisture that can hinder project tasks such as curing concrete, drying paint, and setting drywall.

Follow the manufacturer's instructions and applicable codes to ensure the heater is the proper distance away from the propane cylinder it's connected to, as well as other heaters and cylinders. Consider putting sawhorses over the hose to protect it as it runs from the heater to the cylinder.



USING AN OUTDOOR-DESIGNATED SPACE HEATER INDOORS CAN BE DEADLY

Heaters that are not designed to be used indoors can generate high levels of carbon monoxide.

FOLLOW MANUFACTURER'S INSTRUCTIONS
for how to safely use the appliance.

Below are a few examples of code requirements pertaining to propane-powered temporary construction heat:

- *Direct cylinder-mounted heaters away from the cylinder. If more than one such heater is used on the same level of a project, they should be separated by at least 20 feet.*
- *Do not point a blower or radiant heater toward a cylinder that's within 20 feet.*
- *Cylinders manifolded together to supply a single heater should not exceed 735 pounds water capacity (W.C.) (300-lb. propane capacity).*
- *Only propane containers under 245 pounds W.C. (100-lb. propane capacity) should be used indoors.*

Always refer to building codes and manufacturer's instructions for more information on safely handling, using, and storing propane containers for temporary heat in buildings under construction.

6

Portable Propane Cylinders



Tips for Cylinder Use

Propane cylinders are used to power forklifts, mowers, and other equipment. If your organization uses, stores, or refills these cylinders, consider adding these safety tips to your Emergency Action Plan.

GENERAL PROPANE CYLINDER SAFETY

Keep away from sources of ignition (such as smoking/vaping, sparks, flames) while handling, transporting, or changing cylinders on a piece of equipment.



Keep the cylinder upright

Make sure it will not fall, shift, or roll. Certain cylinders, such as a forklift or mower cylinder, can be stored either vertically or horizontally. If you store these cylinder types in the horizontal position, the relief valve must be in the 12 o'clock position.



Keep the valve closed

- when the appliance/equipment is not in use.
- when not connected to an appliance or equipment.



Forklift cylinders stored with relief valve in 12 o'clock position

Refilling Cylinders

As an organization that uses propane, your employees must know and understand your company's process for refueling propane cylinders. These are three common ways to refill propane cylinders:

- 1 CYLINDER EXCHANGE**
Your propane supplier exchanges empty containers for full propane containers.
- 2 ON-SITE REFUELING**
Your propane supplier fills cylinders at your location.
- 3 ON-SITE SELF-REFUELING**
Your employees are trained to safely refill cylinders from an on-site propane dispenser. Contact your propane supplier for training requirements and resources.

Testing for Leaks

IT IS IMPORTANT TO INSPECT FOR LEAKS

Do this each time you connect a cylinder. This can be accomplished with a simple "bubble" test (*scan QR code for video*):



- 1** Apply leak detector solution or thick soapy water to the entire valve area and point of connection.
- 2** Slowly open the cylinder valve and watch for bubbles.
- 3** If bubbles appear, close the cylinder valve, tighten the connection, and repeat the process. If bubbles still appear, close the cylinder valve and call your propane supplier immediately.

VIDEO AVAILABLE!

Scan QR code with
cell phone camera.

propane.com/small-cylinders-safety



Transporting Cylinders

Always follow these rules, local codes, and your organization's policies and procedures when transporting propane cylinders.

- Never transport a leaking cylinder.
- Secure cylinders – position such that the relief valve is in the vapor space of the container, not in the liquid space.
- Containers should be transported in a suitable rack, in a frame, or on a flat surface. Fasten securely to minimize the possibility of movement, tipping, or physical damage while in transit.
- Make sure valves and other components are protected. All cylinders must have collars or screw-on-type caps securely in place, even when empty.
- All cylinder outlet valves should be closed.

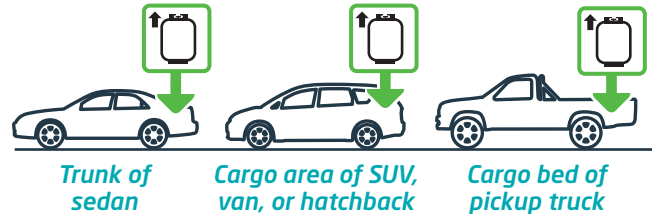
When transporting more than 1,000 pounds of propane, including the weight of the cylinders:

- Vehicle must be placarded as required by DOT regulations or state law.
- Each truck or trailer transporting portable containers must be equipped with at least one approved portable fire extinguisher having a minimum capacity of 18 pounds of dry chemical with an ABC rating.



If transporting in a passenger car or truck, avoid transporting in passenger area, if possible. U.S. legal limits for closed-bodied vehicles are:

- No more than four (4) 20-pound cylinders.
- No cylinders larger than 45-pound capacity.
- No more than 90 pounds total propane weight.



DO NOT LEAVE CYLINDERS IN YOUR VEHICLE

Drive directly to your destination and immediately remove the cylinders from your vehicle. Do not leave cylinders inside the vehicle or trunk. The pressure relief valve (if the parked vehicle gets too hot) or a leak may release propane, filling the enclosed space with flammable gas.

Storing Cylinders

Keep cylinders outside and away from sources of ignition and things that generate heat.

- The cylinder is designed to be kept outside, even in full summer sun.
- Additional heat (for example, from a heating appliance or fire) can cause pressure to build up inside the cylinder. If this happens, the pressure relief device might release propane.
- Released or leaking propane can be ignited or collect in an enclosed area.



Keep spare cylinders away from propane appliances and equipment.

Do not put a spare propane cylinder (i.e., a cylinder that is not connected to the appliance or equipment) under or near a propane appliance (e.g., a grill) or equipment.



When storage is set up by your propane supplier, you must not move cylinder cages or groups of cylinders closer together. There are specific codes and regulations for the proper location and positioning of containers.

ADDITIONAL STORAGE TIPS:

- Make sure valves and other components are protected. All cylinders must have collars or screw-on-type caps securely in place, even when empty.
- All cylinder outlet valves should be closed.
- Ensure that cylinders are not exposed to collecting water.
- Store cylinders in safety cages or cabinets in level areas.
- Protect cylinders from accidentally being struck or falling.
- When stored upright, protect cylinders from falling by using a chain or other supports.
- Certain cylinders, such as a forklift or mower cylinder, can be stored either vertically or horizontally. If you store these cylinder types in the horizontal position, the relief device must be in the 12 o'clock position.
- Fire extinguishers should be placed within easy access of propane storage.

STORAGE OF PROPANE CYLINDERS INSIDE BUILDINGS NOT FREQUENTED BY THE PUBLIC

The maximum quantity of propane allowed in one inside storage location cannot exceed 300 pounds total propane weight. If additional storage locations are required on the same floor within the same building, they must be separated by a minimum of 300 feet.

Cylinders should not be located near exits, stairways, or in areas that are normally used, or that are intended to be used, for the safe exit of the building's occupants.

Additional Cylinder Safety

DO NOT REPAIR OR MODIFY



NEVER repair or modify propane cylinders. Exchange or contact your propane supplier or qualified professional for service.

DAMAGED OR UNWANTED CYLINDERS



NEVER use a damaged cylinder or one that has been in a fire.

Dispose of damaged or unwanted cylinders properly.

Never throw a propane cylinder in the trash. Follow your organization-specific hazardous waste disposal program or contact your propane supplier for guidance.



OVERFILL PREVENTION DEVICE (OPD) REQUIRED *(except for certain specialized cylinders)*

Only use cylinders with an Overfill Prevention Device (OPD)
(except for cylinders intended for specialized applications – check with your employer).

An OPD is a safety feature that is required by law. Most cylinders with an OPD have a special triangular handwheel with the letters “OPD” on it.

If your cylinder does not have an OPD or you are not sure, do not use it. Take it out of service and contact your propane supplier.



Propane Facts

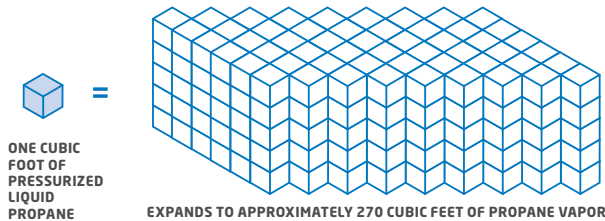


Propane Facts

Propane is known by several names, including Liquefied Petroleum Gas (LPG), or LP Gas.

Propane is a liquid fuel that's stored under pressure and, in most systems, changes from liquid to vapor (gas) as it leaves the container. As liquid propane changes to vapor, it expands 270 times. In other words, one cubic foot of liquid propane stored under pressure will expand to approximately 270 cubic feet of vapor when released into the atmosphere.

That means that **even a small amount of liquid propane turns into a lot of flammable propane vapor!**



When it mixes with air, propane is extremely flammable, and can be ignited by sources including open flames, smoking materials, electrical sparks, or even static electricity.

Propane vapor is naturally invisible and odorless.

A unique odor is added to propane to help alert people to a leak.

Propane vapor is heavier than air. This means it will accumulate in low-lying areas, such as basements, crawl spaces, ditches, or along floors.

Air currents, such as those generated by HVAC systems, wind, or movement of people and equipment, may result in leaking propane vapor being moved from the point of a leak to other parts of a building or outdoor areas.

Liquid propane can cause frostbite. As propane changes state from liquid to vapor and expands, the remaining liquid propane in the container cools. If liquid propane or a visible cloud of propane leaks out and comes into contact with your skin, you can get "freeze burn" or frostbite.

Safety Review



Safety Review

- KNOW PROPANE'S SMELL**
Ensure all employees are familiar with the unique odor of propane and situations in which they may not be able to smell it. (page 5)
- TRAIN ON EMERGENCY PROCEDURES**
Ensure all employees know what to do if they suspect a gas leak.
- MOVE FLAMMABLE AND COMBUSTIBLE MATERIALS**
Ensure that all flammable and combustible materials are stored away from propane appliances and equipment.
- LEARN ABOUT YOUR PROPANE SYSTEM**
Ensure all employees know where shut-off valves and other important safety features are located, and how to operate them.
- MAINTAIN PROPANE APPLIANCES AND EQUIPMENT**
Ensure all employees know what maintenance must be done by qualified professionals, and what they are responsible for addressing.
- KNOW SIGNS OF CARBON MONOXIDE POISONING**
Ensure all employees are aware of signs that unsafe levels of carbon monoxide may be present, and how to reduce the risk of carbon monoxide poisoning.
- CYLINDER SAFETY**
Ensure all employees who interact with portable propane cylinders know how to do so safely.



IF YOU SUSPECT A PROBLEM

If you suspect a problem, do not hesitate to call for help or, if applicable, initiate your Emergency Action Plan (EAP).



**For more information and training materials
on these topics, go to propane.com.**