



DISPENSING PROPANE SAFELY

Auto Gas

Participant WORKBOOK



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Using this Workbook

This workbook is designed to enhance your learning as you participate in this class. Please note the following icons which will be used to flag various kinds of learning opportunities:



Learning Activities: These activities help engage you as a learner by promoting discussion of application of the content presented in the training.



Checks for Understanding: Throughout the program you will be asked to confirm that you have grasped key concepts. These are a variety of true/false, multiple choice, multiple response, and matching questions.



This same icon is used for **discovery exercises** and **lab Activities**. These provide hands-on practice and encourage you to explore some of the features of their own test equipment.



Important safety messages will be located in boxes next to this symbol. When you see this symbol pay special attention to the safety message next to it.



Final Knowledge Quiz: At the end of the program you'll complete a final knowledge quiz to test your recall of the key concepts presented throughout the training.



You may wish to use **sticky notes** to keep track of your place in the workbook as you progress through the program or to mark pages you may wish to come back to.



Feel free to **make notes and highlight text** throughout this workbook. It's yours to keep, so make it as valuable of a resource as you can. Try to fill-in all the blanks as you proceed through the module.



See a **MISTAKE!**
... Let us know:

As you proceed through the program, make notes about **any changes needed** within the materials. Then, please copy and share this information with PERC:

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Program Overview

Dispensing Propane Safely consists of three sub-programs. Depending on your job duties you may take some or all of the following modules:

Program 1: Dispensing Propane Safely – Small Cylinders

This program consists of modules 1-8. There is an optional module 9 that covers *Purging Cylinders*.

Program 2: Dispensing Propane Safely – Motorhome and ASME tanks

This program starts with modules 1-3 (from program 1) and then wraps-up with module 10.

Program 3: Dispensing Propane Safely – Dispensing Autogas

This program consists of modules 1 and 3 (from program 1) as well as modules 11 and 12.

Taking all modules 1-12 covers all of the topics included in all three programs.



Objective/Goal

After you complete this **Dispensing Propane Safely** program you will be able to dispense propane into small cylinders, ASME tanks and motorhomes, and/or Autogas. This program is geared to non-industry professionals.



Topics

- Propane Safety
- Propane Fires and Uncontrolled Gas Release
- Identifying cylinders
- Purging cylinders
- Filling ASME tanks and motorhomes
- Dispensing autogas

Module 1: Introduction to Propane

Propane is a gas that is _____
and _____ .
It is used as a _____ because it will burn
under the right conditions.



Touching propane can cause frostbite or freeze burns. Always wear the appropriate personal protective equipment or PPE.

Notes:

Sources of Propane

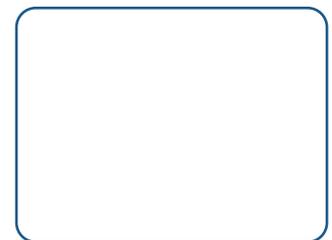
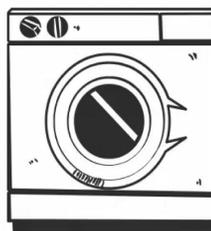


Most propane comes from _____ and _____.
Some of it is created through the _____ process.

Propane is stored underground until it's transported by train, truck, or pipe to secondary storage, called a bulk plant. At the bulk plant, propane is stored in large steel tanks.

From there, it's shipped in smaller trucks called bobtails to millions of customers throughout the United States.

Uses for Propane



Module 11: Dispensing Station Equipment- Autogas

In this module we examine Dispensing Station Equipment and how to use it to refill a vehicle that runs on Autogas.



Identify YOUR Dispensing Station Equipment



At my station I can fill:

- Small Cylinders
- Motorhomes and ASME tanks
- Vehicles (Autogas)

At my station, the storage tanks are:

- Vertical
- Horizontal

At my station I use these nozzles:

- K15 Quick Connect Nozzle



- ACME 1 3/4" Screw-On Nozzle





EXERCISE: Parts of the Dispenser

Instructions: Match the part of the dispenser with its definition and use:

Scale	Provides secure, gas-tight and flexible connection between the dispensing station and the cylinder.
Valve(s)	A device that measures the quantity of liquid propane that flows through it when dispensing propane.
Hose	Used to weigh the cylinder and assembly, to assure the correct amount of propane is distributed.
Meter	Designed to separate and stop the flow of propane from leaking into the atmosphere
Breakaway Device	Controls the passage of propane from the dispensing station to the cylinder.

Personal Protective Equipment (PPE)

My company requires the following Personal Protective Equipment when I dispense propane:

Starting up the Dispenser

1. _____ the Dispenser.
2. Put on appropriate _____.
3. _____ open the liquid outlet valve.
4. Open the liquid _____ manual valve.
5. _____ all valves, piping, transfer hose, and fittings.
6. Inspect the _____ of all connection adapters for excess wear.
7. Check "O" ring and _____.
8. Inspect for _____.



If a part of the system does not appear to be in good working order, close all valves and contact your supervisor and do not use the system until it has been determined to be safe to use.



Check Understanding

Check your understanding of the content in this module by answering the following questions.

1. Autogas is propane that has had additives added to it to make it compliant for vehicle use.
 True
 False
2. When filling vehicles with autogas the flow of propane will shutoff automatically when the tank is full.
 True
 False
3. Insulated cloth gloves are adequate to protect your hands from liquid propane burns when dispensing propane into an Autogas vehicle tank using an ACME screw-on connection.
 True
 False
4. PPE requirements are set by national regulations.
 True
 False
5. There are multiple types of filling nozzles for dispensing autogas.
 True
 False

Module 3: Uncontrolled Propane Release and Fires



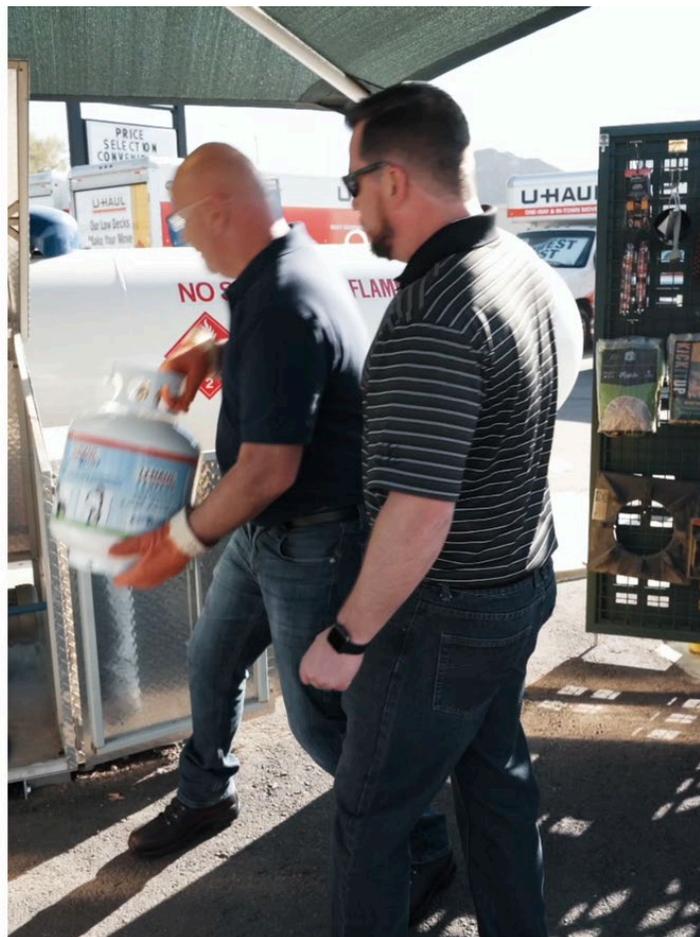
Scenario

Select the best answer

Close the propane emergency shutoff valve (ESV) and turn off the electrical supply.

Tell the customers to evacuate away from the area.

Move away from the leak area and call 911 even if the leak stops right away.



Which situation is correct?

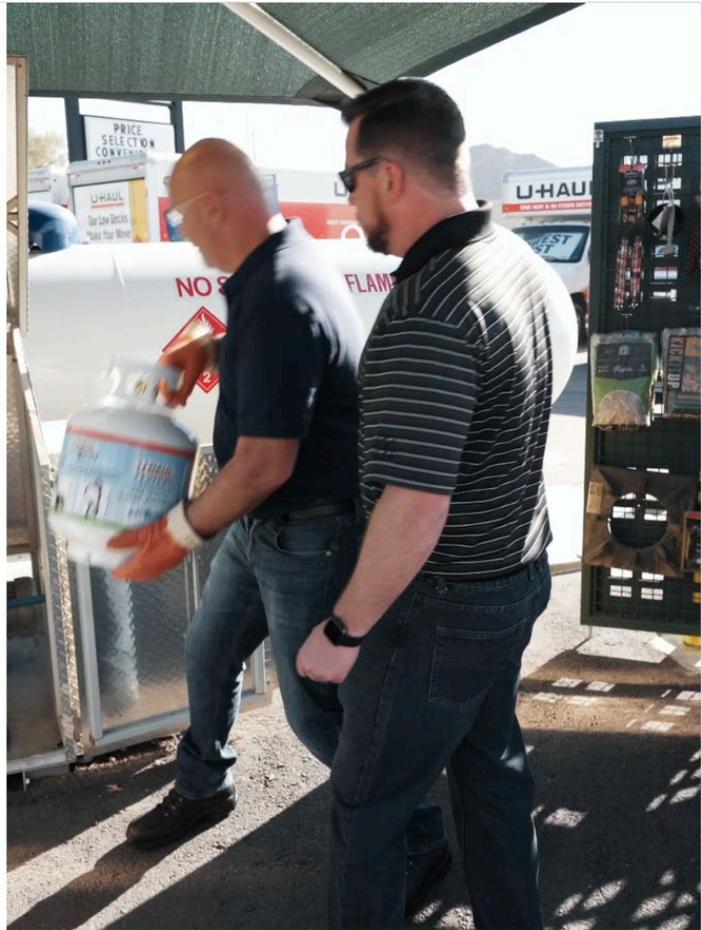
Continuing the Scene

Select the best answer

Close the propane emergency shut off valve.

Call 911

Turn off the electrical supply.



How should you proceed?

Steps to Complete During an Uncontrolled Propane Release

1. Take Action – Evacuate
2. Be aware of your surroundings
3. Get help

Responding to the Uncontrolled Propane Release

- Do not re-enter the area around the propane leak.
- Do not endanger yourself or others.
- Wait for **emergency responders.**

Able to stop propane release

- Notify your Supervisor

Unable to stop uncontrolled release

- Call 911
- Your name
- Your company name
- Location of the uncontrolled propane release
- Your contact information
- Any other information: kind of container, size of container, if anyone has been injured
- Notify your supervisor

What should be inspected every time you use the dispenser?

Summary

- Be prepared to handle an emergency in an efficient and safe manner to minimize potential risks.
- You should never attempt to respond to any emergency unless you have been properly trained to do so.
- Evacuate the area, be aware of your surroundings, and call for help.



Check Understanding

Check your understanding of the content in this module by completing the following.

1. In the event of an uncontrolled propane leak or fire, what should you do? (Select all that apply.)
 - Shut down the dispenser, if safe to do so.
 - Evacuate the area immediately.
 - Call for help.
2. What might be causes of an uncontrolled release of propane? (Select all that apply.)
 - Damaged container component
 - Piping failure
 - Damaged hose
 - Broken valve
3. What is the FIRST thing you should do in the event of an uncontrolled release at a propane dispenser?
 - Call 911.
 - Evacuate customers.
 - Shut off the propane.
 - Shut off the electrical system.
4. How do you decide which direction to evacuate during an uncontrolled propane release?
 - Get above the propane release, like on a hill.
 - Go to the largest open area, like a parking lot.
 - Go to the nearest building, like the service center.
 - Upwind from the propane release.
5. What's the minimum distance to evacuate in the event of an uncontrolled propane release?
 - 30 feet
 - 130 feet
 - 330 feet
 - 5,280 feet (1 mile)

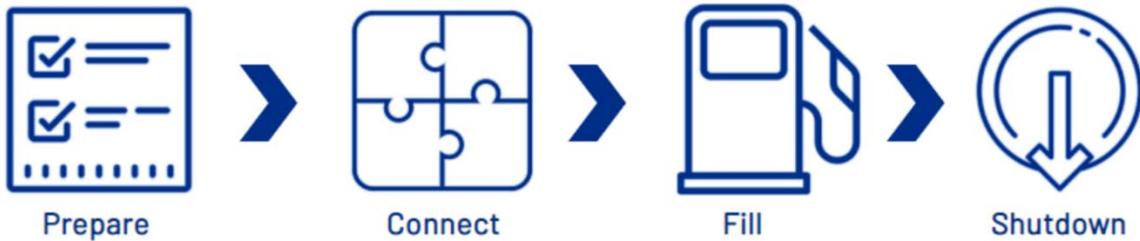
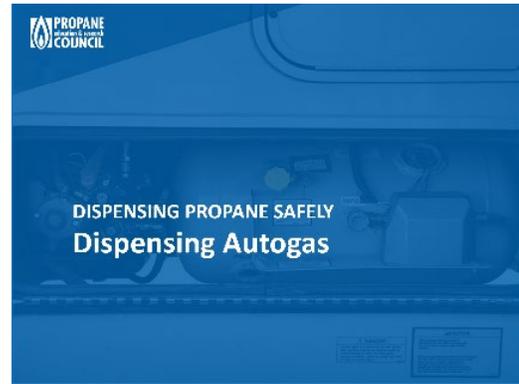
6. What do you need to tell the 911 operator about an uncontrolled propane release?

(Select all that apply.)

- Your name
- Your boss's name
- Your location
- Description of any injuries

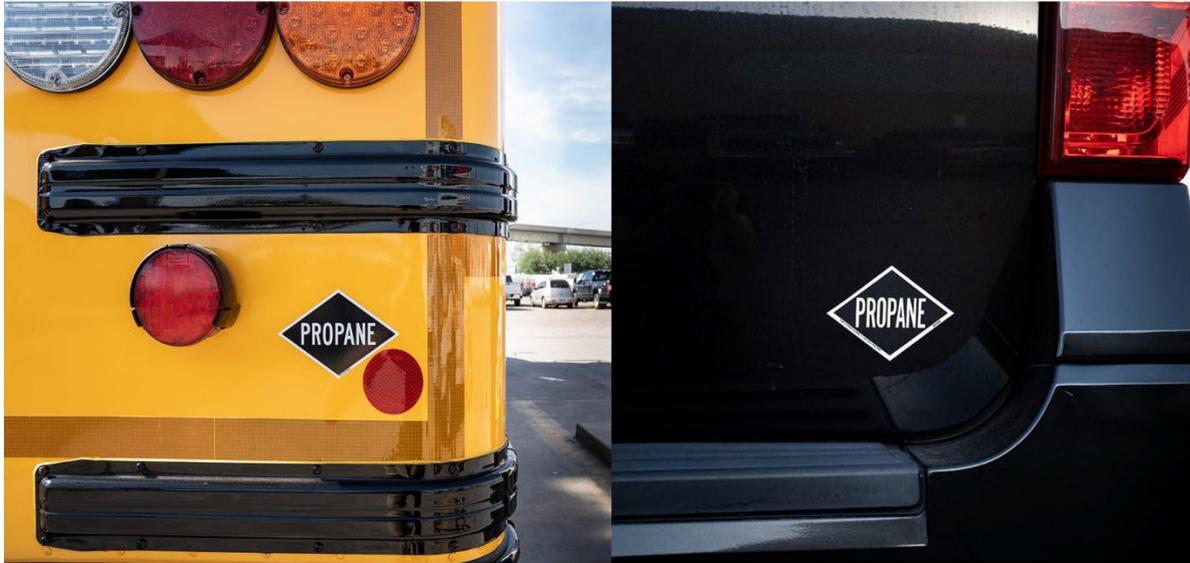
Module 12: Dispensing Autogas

When a vehicle is fueled by propane, it is known as Autogas. There are four steps to dispensing Autogas.



<ul style="list-style-type: none"> • Park on _____ ground • Turn off _____ • _____ vehicle takes propane • Inspect tank for _____ • Confirm _____ • _____ static electricity 	<ul style="list-style-type: none"> • Remove _____ • _____ fill valve • Attach _____, if required • Connect _____ 	<ul style="list-style-type: none"> • _____ the dispenser • Open the _____ • _____ for the overfill protection device to automatically stop the flow of propane 	<ul style="list-style-type: none"> • Close the _____ • Turn off dispenser _____ • Disconnect _____ • Store _____ • Disconnect _____, if applicable • Check for _____ • Reinstall _____
--	--	---	---

Does it take Autogas?



When filling Autogas, make sure there are:

- No ignition sources
- No metal working such as welding or cutting within 35 feet
- No internal combustion engines running nearby within 15 feet

Connecting to the Dispenser

What differences are there between dispensing gasoline or diesel and dispensing Autogas?

Adapters and Connectors

Quick Connect	Notes	Threaded
 A black plastic quick-connect nozzle with a silver metal body and a yellow tip.		 A silver metal threaded nozzle with a black plastic handle.

My location can fill using: _____

Steps to filling Autogas

1. Activate the dispenser pump. Ensure the meter or register is set to zero as required by company policy.
2. Squeeze the trigger nozzle to begin fueling.
3. When the overfill protection device stops the flow of propane into the tank, release the quick disconnect nozzle and return it to the dispenser.
4. Turn off the dispenser pump.



With threaded nozzles, SLOWLY loosen to bleed off any trapped liquid propane. If propane continue to escape, retighten the nozzle and contact your supervisor for help.

NOTES:



Check Understanding

Check your understanding of the content in this module by answering the following questions.

1. Make sure there are no ignition sources within ____ feet of the filling area.
 - 5
 - 25
 - 80
 - 1000

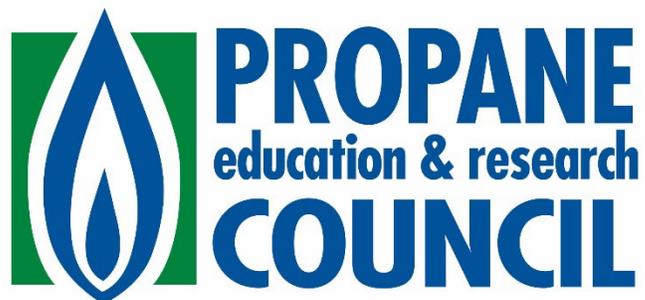
2. Propane Autogas-fueled vehicles are required to have a propane decal located _____.
 - On the passenger-side window
 - On the left side of the front bumper
 - On the lower-right read of the vehicle, above the bumper
 - On the lower-right rear of the vehicle, attached to the bumper

3. Before beginning the refueling process, what should you do? **Select all that apply.**
 - Confirm that vehicle is turned off.
 - Do not smoke, strike matches, or light a cigarette.
 - Touch a grounded object to control static electricity.
 - Have the driver stand by a dispenser station.

4. The dispenser operator does NOT need to be present during the entire filling procedure.
 - True
 - False

5. If a nozzle with a threaded connection is being used, it must be firmly attached and properly threaded before beginning the filling process.
 - True
 - False

6. What safety device automatically stops the flow of fuel into the tank when it is filled?
 - Overfill prevention device (OPD)
 - O-ring on the filler valve
 - Filler valve flap
 - Filler nozzle ball valve



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