

PROPANE SAFETY

This easy-to-use Leader's Guide is provided to assist in conducting a successful presentation. Featured are:

INTRODUCTION: A brief description of the program and the subject that it addresses.

PROGRAM OUTLINE: Summarizes the program content. If the program outline is discussed before the video is presented, the entire program will be more meaningful and successful.

PREPARING FOR AND CONDUCTING THE PRESENTATION: These sections will help you set up the training environment, help you relate the program to site-specific incidents, and provide program objectives for focusing your presentation.

REVIEW QUESTIONS AND ANSWERS: Questions may be copied and given to participants to document how well they understood the information that was presented. Answers to the review questions are provided separately.

ATTENDANCE RECORD: Document the date of your presentation as well as identify the program participants. The attendance record may be copied as needed.

INTRODUCTION

Propane gas is the most widely used Liquefied Petroleum Gas (LPG) in the United States. It has been a common fuel in homes and businesses since the 1920's. The value of propane is immeasurable because it is used extensively in fueling forklifts in most American industries. It is also clean-burning and easily maintained. While propane is quite beneficial, it is also highly flammable and must be handled safely.

This program provides the viewer with an understanding of the properties of propane as well as safety and health precautions. Safe refueling procedures are also detailed in the video.

PROGRAM OUTLINE

PROPERTIES AND CHARACTERISTICS OF PROPANE

- Propane burns cleanly, has a high heat value and has a high octane rating.
- In its natural state, propane is colorless, odorless and non-poisonous. A pungent chemical compound is often added so it can be detected by smell.
- Propane is heavier than air and can accumulate in low lying areas.
- Propane can become an asphyxiant when its vapors reduce the amount of breathable air in a confined space.
- Propane presents a freeze burn hazard if its cold liquid contacts unprotected skin.
- Escaping propane can create a fire and explosion hazard.
- Wear safety glasses and a full face shield when working with propane tanks and cylinders.
- Consult the MSDS on propane for more information about its properties, handling precautions and safety considerations.

BASIC PROPANE HANDLING TIPS

- Know and understand the safety features and the manufacturer's instructions for working with a propane filling tank.
- Make sure propane cylinders approved for LPG storage are not damaged and do not leak.
- Open the filling valve on the propane filling tank as a check for when it is full.
- Inspect the fuel lines, safety relief valve and other components of the fuel system for leaks and damage.
- Use the MSDS for specific information about propane and follow company policy when handling it.

REFUELING PREPARATIONS

- Look for DOT, ICC or ASME markings and name plates on the cylinder to ensure it is approved for LPG use.
- Check the cylinder for dents and leaks. Check the discharge direction of the relief valve to make sure that it discharges into the atmosphere.
- Check the protective cover on the piping to prevent moisture or debris from entering the relief valve.
- Eliminate all flammable materials from the refueling area.
- Shut off a forklift and remove the propane cylinder during refueling.
- Put on protective gloves and eye protection as required by your company's safety policy when handling propane.

REFUELING CYLINDERS FROM DISPENSING UNIT

- 1) After removing the cap from the filler valve, connect the hose coupling and open the main liquid valve on the storage tank.
- 2) Turn on the transfer pump, open the valve on the tank to be filled and open the hose end valve with no more than two turns.
- 3) After checking for leaks, open the maximum liquid outage valve about one- quarter turn until the gas begins to vent. Fill the tank until the liquid vents from the outage valve.
- 4) Close the end to the valve as soon as the liquid vents, shut off the transfer pump and close the outage valve.
- 5) Close the valve on the tank and partially loosen the coupling at the tank filler valve, bleeding off trapped liquid.
- 6) Disconnect the hose coupling when de-pressurized and replace the protective plastic cap on the filler valve.
- 7) Make sure outage gauge is closed tight and close the main liquid valve at the storage tank. Store the hose properly.

CHECKING THE FORKLIFT PROPANE FUEL SYSTEM

- Check the vehicle safety relief valve behind the driver's of most forklifts; this valve will allow excess pressure to escape from the cylinder if the its safety relief valve malfunctions.
- Inspect fuel hoses, connections and the safety relief valve for sings of wear, damage and leaks.
- Check the tightness of the fuel hose connections periodically because they have a tendency to loosen.

PREPARE FOR THE SAFETY MEETING OR TRAINING SESSION

Review each section of this Leader's Guide as well as the videotape. Here are a few suggestions for using the program:

Make everyone aware of the importance the company places on health and safety and how each person must be an active member of the safety team.

Introduce the videotape program. Play the videotape without interruption. Review the program content by presenting the information in the program outline.

Copy the review questions included in this Leader's Guide and ask each participant to complete them.

Copy the attendance record as needed and have each participant sign the form. Maintain the attendance record and each participant's test paper as written documentation of the training performed.

Here are some suggestions for preparing your videotape equipment and the room or area you use:

Check the room or area for quietness, adequate ventilation and temperature, lighting and unobstructed access.

Check the seating arrangement and the audiovisual equipment to ensure that all participants will be able to see and hear the videotape program.

Place or secure extension cords to prevent them from becoming a tripping hazard.

CONDUCTING THE PRESENTATION

Begin the meeting by welcoming the participants. Introduce yourself and give each person the opportunity to become acquainted if there are new people joining the training session.

Explain that the primary purpose of the program is to provide basic safety knowledge of proper cylinder refueling operations.

Introduce the videotape program. Play the videotape without interruption. Review the program content by presenting the information in the program outline. Lead discussions about dangerous handling and storage situations that may have been prevented by following good safety practices. Use the review questions to check how well the program participants understood the information.

After watching the videotape program, the viewer will be able to identify the following:

- The beneficial and potentially hazardous properties of propane;
- The steps involved in refueling a propane cylinder from a dispensing unit;
- Precautions and safety procedures for handling propane.

**PROPANE SAFETY
REVIEW QUESTIONS**

Name _____ Date _____

The following questions are provided to determine how well you understand the information presented in this program.

1. LPG is a common name for _____.
 - a. Liquid Propane Gas
 - b. Liquid Petroleum Gas
 - c. Liquid Pure Gas

2. A physical property of propane that makes it so popular as a fuel is _____.
 - a. it's less expensive than most other carbon-based fuels
 - b. its ability to be highly compressed into a container
 - c. its ability to burn cleanly without leaving deposits

3. List two of the three markings on a propane cylinder that shows that it is appropriate for use in storing LPG.

4. When inspecting a propane cylinder before filling it, test the _____.
 - a. cylinder capacity rating
 - b. latest hydrostatic testing date
 - c. direction of the relief valve

5. Gloves and eye/face protection should be worn when handling LPG is to prevent contact with the _____.
 - a. extremely cold gas
 - b. highly pressurized gas
 - c. highly toxic gas

6. The way to tell when a propane cylinder is full enough is to _____.
 - a. check the reading on the outage gauge
 - b. watch for a visible cloud to vent from the relief valve
 - c. watch for the liquid to vent from the outage valve.

7. Propane is _____ air.
 - a. lighter than
 - b. heavier than
 - c. the same weight as

8. Propane is an asphyxiant when it _____.
 - a. is released in small amounts
 - b. replaces oxygen in breathable air
 - c. replaces nitrogen in breathable air

9. The white fog that is produced when LPG is spilled is formed _____.
 - a. if the dew point is low enough to form the fog
 - b. as a result of combustion between the vapor and the air
 - c. when air freezes on contact with the very cold vapor

ANSWERS TO THE REVIEW QUESTIONS

1. b

2. c

3. DOT, ICC, ASME

4. c

5. a

6. c

7. b

8. b

9. c