

## Propane: A Safe Fuel

### What is Propane?

Propane is a hydrocarbon (C<sub>3</sub>H<sub>8</sub>) 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.

### Propane is a Safe Fuel

The propane industry has developed numerous methods to make the transport and use of propane safe:

- ❑ Propane equipment and appliances are manufactured to rigorous safety standards.
- ❑ Propane has a narrow range of flammability when compared with other petroleum products and has the lowest flammability range of any fossil fuel. In order to ignite, the propane/air mix must contain from 2.2 percent to 9.6 percent propane vapor. If the mixture contains less than 2.2 percent gas, it is too lean to burn. If it contains more than 9.6 percent, it is too rich to burn.
- ❑ Propane will not ignite when combined with air unless the source of ignition reaches at least 940 degrees Fahrenheit. In contrast, gasoline will ignite when the source of ignition reaches only 430 to 500 degrees Fahrenheit.
- ❑ If liquid propane leaks, it doesn't puddle but instead vaporizes and dissipates into the air.
- ❑ Because it is released from a pressured container as a vapor, propane can't be ingested like gasoline or alcohol fuels. Propane is a nontoxic, nonpoisonous fuel that doesn't contaminate aquifers or soil.
- ❑ Because propane is virtually odorless and colorless in its natural state, a commercial odorant is added so propane can be detected if it leaks from its container.
- ❑ Propane vehicle tanks are constructed from carbon steel in compliance with a code developed by the American Society of Mechanical Engineers.
- ❑ New propane cylinders are manufactured with an Overfilling Prevention Device (OPD) that shuts off the filling process when the tank reaches 80 percent of its liquid capacity. This allows for changes in fuel volume caused by temperature variations without any release of gas from the tank.
- ❑ Propane engine fuel systems are fitted with safety devices and shut-off valves that function automatically if the fuel line ruptures.

- ❑ The Propane Education and Research Council (PERC) offers an award-winning preventive maintenance program called GAS Check® (Gas Appliance System Check). The National Propane Gas Association (NPGA) currently manages this program. Trained technicians inspect entire propane systems and appliances to ensure they are running safely and efficiently. The program also educates homeowners about the proper maintenance of propane appliances and how to avoid potential safety hazards.

### **Safety Starts with Education**

- ❑ The propane industry is engaged in ongoing efforts to increase safety in the handling, use, and maintenance of propane and propane equipment:
- ❑ The Certified Employee Training Program (CETP) is a nationally recognized training program for people involved in the handling of propane, as well as propane equipment and appliances. The CETP is being used extensively throughout the country and is continually expanded and updated.
- ❑ In 2002, the PERC developed the Compliance Program consolidating all federal OSHA, DOT, and EPA compliance information in one, easy-to-understand program. The Compliance Program consists of two key components: A guidebook and an accompanying curriculum handbook. The guidebook takes information published by OSHA, DOT, and the EPA and puts it into simple, concrete explanations of what is required of propane marketers for regulatory compliance. The training handbook, along with an interactive CD, educates propane marketers and their employees on the handling and transporting of propane in accordance with OSHA and DOT regulations.
- ❑ In 2002, NPGA, with funding from PERC, developed a comprehensive training program for America's public safety agencies and propane retailers. The educational package includes a 220-page textbook, *Propane Emergencies*, which was sent free to all U.S. fire departments. The objectives of the emergency response program are to increase the level of responder safety, improve efficiency to mitigate emergencies and to encourage propane marketers and local emergency responders to develop working relationships before an accident occurs.
- ❑ Each year, thousands of industry employees and firefighters attend industry-sponsored service and safety schools. The sessions provide important training in quickly controlling and safely handling a propane emergency.

Source:

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