

Propane - The Most Widely-Used Alternative Fuel

What is Propane?

Propane is a three-carbon alkane gas (C₃H₈), also known as liquefied petroleum gas (LPG) or auto gas. It is colorless and odorless, requiring the addition of an odorant, ethyl mercaptan, for safety purposes. It is well known for its high energy density, clean-burning qualities and domestic availability. Propane is the most commonly used alternative transportation fuel and the third most widely-used vehicle fuel behind gasoline and diesel fuels.

How is Propane Made?

Propane is produced as a by-product of natural gas processing and crude oil refining. The natural gas components that are recovered during this process include ethane, methane, propane, and butane, as well as heavier hydrocarbons. Propane is separated from methane by increasing pressure and decreasing temperatures. There are current investigations of bio-propane as an alternative production method.

Other Propane Uses

Propane is used for home and water heating, cooking and refrigerating food. It can also be used to dry clothes, power farm and industrial equipment, and dry corn. Rural areas that do not have natural gas service commonly rely on propane. The chemical industry uses propane as a raw material for making plastics and other compounds. Less than 2% of U.S. propane consumption is used for transportation fuel.

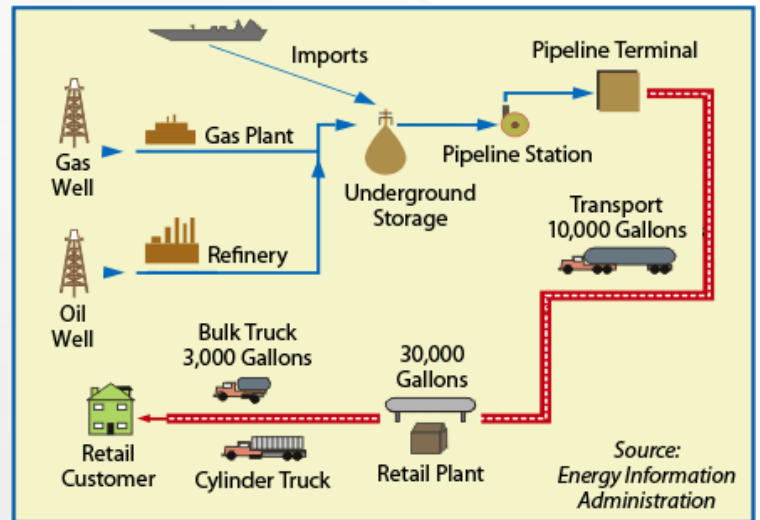


Figure 1: <http://www.sfdc.energy.gov>

Advantages of Using Propane:

- It is non-toxic and therefore produces no threat to soil, surface water, or groundwater.
- High octane rating.
- Domestically produced (97% of it is produced in North America).
- Technology is well-established with a number fueling stations widely available. Early in 2010, there were reported to be approximately 2400 propane stations in the United States.
- High energy density, vehicles can go farther on one tank of fuel as compared to other fuels.
- Exceptionally safe as tanks are 20 times more puncture resistant than gasoline tanks, also has the lowest flammability range of all alternative fuels.
- Propane vehicles produce significantly lower carbon monoxide, nitrogen oxide, hydrocarbon, particulate matter, and greenhouse gas emissions.

What Vehicles Run on Propane?

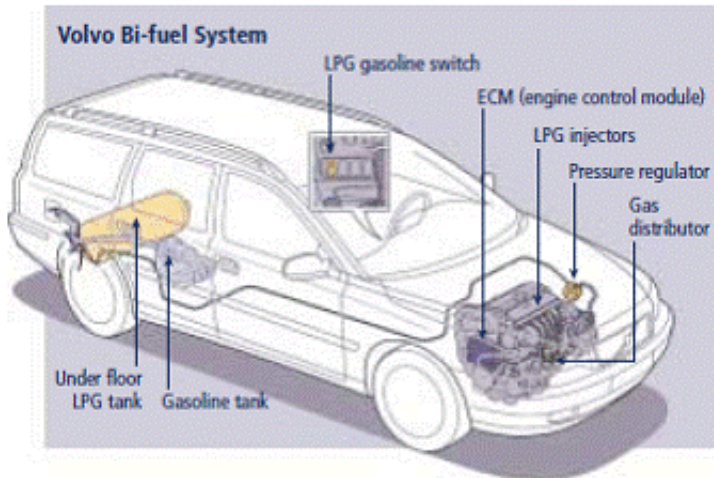


Figure 2: U.S. Department of Energy

Propane is used in light-and medium-duty vehicles, heavy duty trucks, and buses. Many of these are converted gasoline vehicles. Propane-powered vehicles are not available for sale from automotive original-equipment manufacturers. However, there are certified installers that can convert gasoline-powered vehicles to dedicated propane or bi-fuel vehicles.

How Much Does Propane Cost?

The average conversion cost to dedicated propane fuel for a light-duty vehicle is from \$4,000 to \$12,000. This up-front cost can be offset by lower costs in operation and maintenance. The high octane rating, low carbon and low oil contamination have resulted in engine life of up to twice that of gasoline engines.

The Gold Coast Clean Cities Coalition is managed by the South Florida Regional Planning Council (SFRPC). The SFRPC is a regional planning and public agency whose mission is to work with South Florida's public, private, non-profit, and civic leadership to create a better future for south Florida. The SFRPC is one of 11 Regional Planning Councils in Florida and serves three counties: Miami-Dade, Broward, and Monroe; 71 municipalities; and almost 4.3 million residents. For additional information about the SFRPC please visit www.sfrpc.com

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