



LPG CONSUMER & SAFETY TIPS

Engr. Robert R. Cardinales

E-Power Mo: Energy Consumer and Stakeholders Conference
12 July 2017 | Philippine International Convention Center, Pasay City



What is LPG?



What is LPG?

LPG stands for Liquefied Petroleum Gas, either propane or butane or a mixture of both. These gases occur naturally in crude petroleum or natural gas.

In the Philippines, LPG is essentially a mixture of butane and propane.



Sources

1. Field Gas

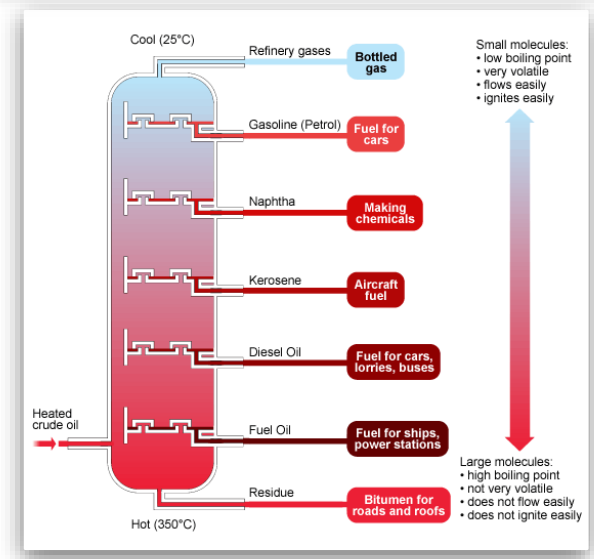
Associated Gas (w/ crude petroleum)

Unassociated Gas (mixed w/ natural gas)

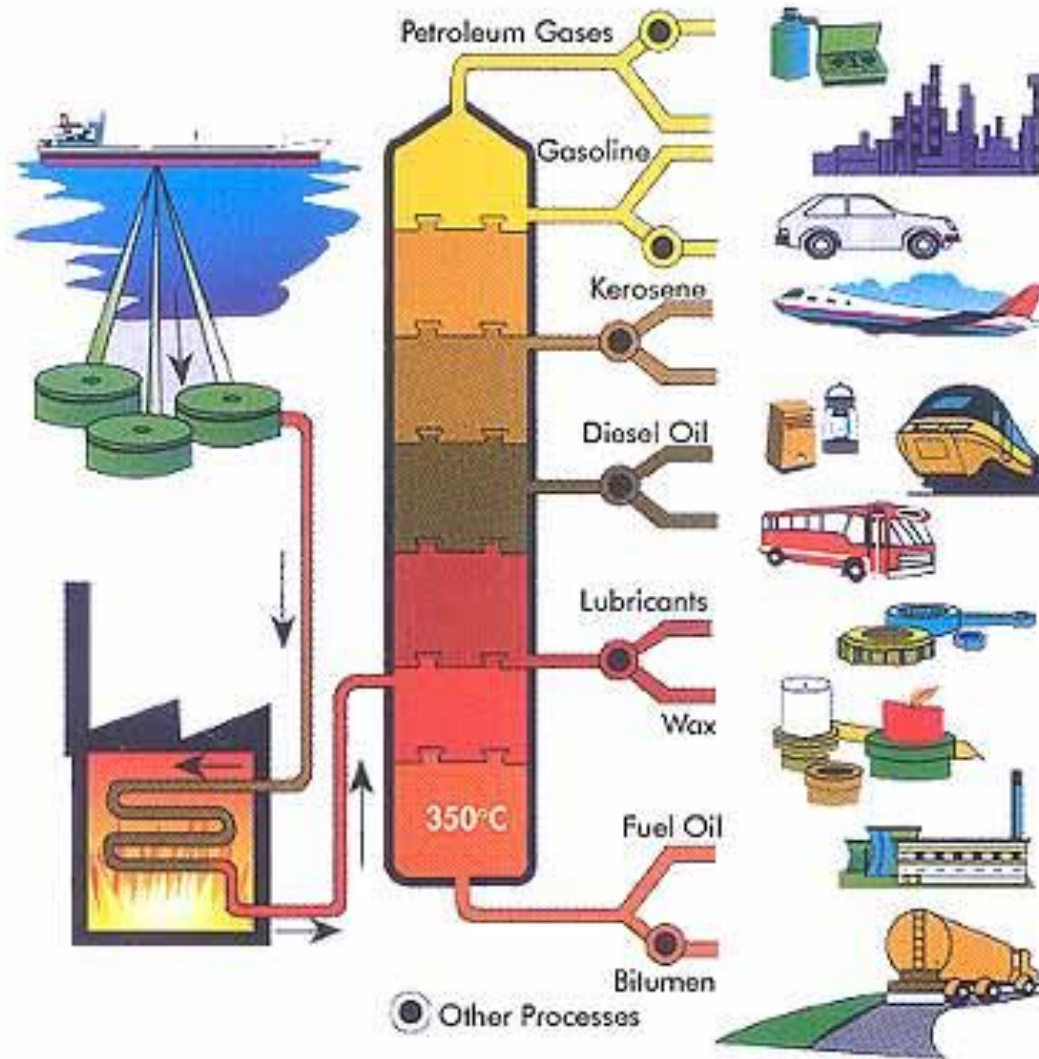


2. Refinery Gas

The result of processing crude oil by distillation, in the same manner that other liquid fuels, such as kerosene, gasoline and diesel, are extracted.



LPG in REFINING PROCESS

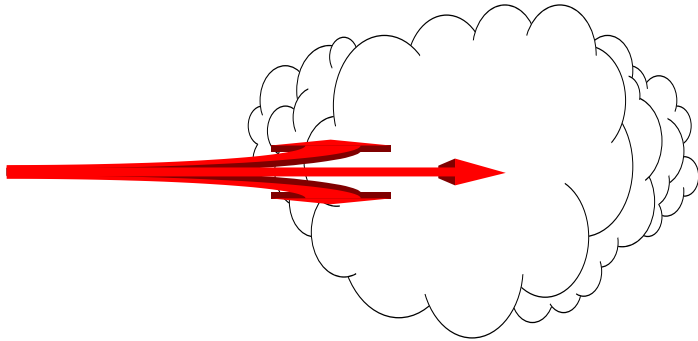


Characteristics of LPG

LPG is liquid inside the cylinder, but immediately transforms to a gaseous state when released. It is liquefied so that it can be stored economically and transported easily.



Characteristics of LPG



When LPG is released, it rapidly vaporizes and mixes with the air.



If the released gas is not properly dissipated, it will readily ignite upon contact with sparks, open flame, or any other source of ignition.



The fire, however, may not be serious unless the gas is confined; in which cases, an explosion may occur, the intensity of which will depend on the degree of confinement.

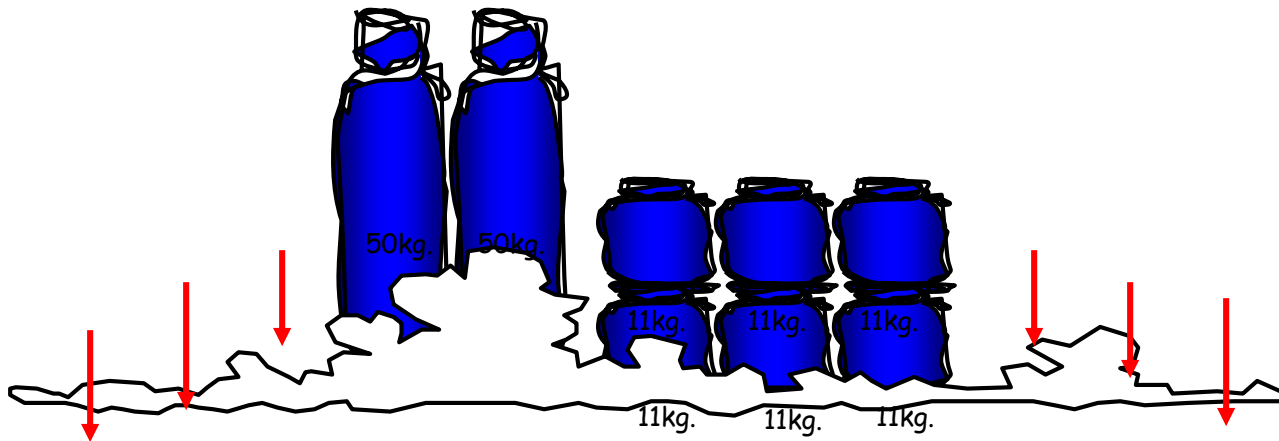
In the open air, flaming LPG vapors travel at about 15 feet per second, depending on the atmospheric conditions and the concentration of the gas.



Characteristics of LPG

LPG VAPOR is HEAVIER than AIR

LPG vapor, when released to the atmosphere is heavier than air. LPG vapor will then tend to deposit itself on the lowest portion in the area.



Characteristics of LPG

PURE LPG IS COLORLESS AND ODORLESS

LPG is as clear as water in the liquid form. As LPG evaporates, it looks like steam, but quickly becomes invisible.

Pure LPG has no smell. For safety purposes, **ethyl mercapthan** is added so any leaks can be detected by scent.



Characteristics of LPG



LPG is non-poisonous and environment friendly.

LPG dissolves natural rubber.



CONSUMER TIPS



Consumer Tips

Buy cylinders with proper markings, e.g., brand name, tare weight



Consumer Tips



Buy LPG cylinders with Tare Weight (TW) markings



Consumer Tips



Look for a weighing scale.



Consumer Tips

Determine the gross weight of LPG in filled cylinders by adding the Tare Weight (T.W.) and net weight of 11.0 kgs.



$$\begin{array}{r} 12.3 \\ + 11.0 \\ \hline \end{array}$$

Gross weight **23.3**



Consumer Tips

Underfilling

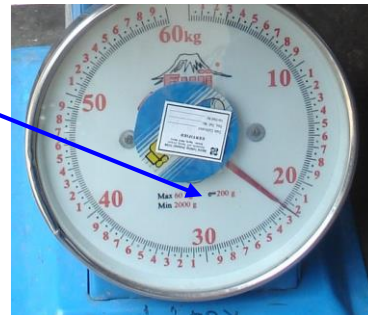


Net weight $+$ 11.0 kg.

Gross Weight **23.0 kg.**

22.4 kg.

-0.6 kg.



Consumer Tips

In purchasing LPG:

- Be sure that the cylinder is in good condition.



Consumer Tips

- Check if the security seal is intact and firmly affixed to the valve.



The brand name/logo in the cylinder and the seal must be the same



LPG Cylinder Defects

1. Corrosion



General Corrosion



Line Corrosion



LPG Cylinder Defects

2. Leak



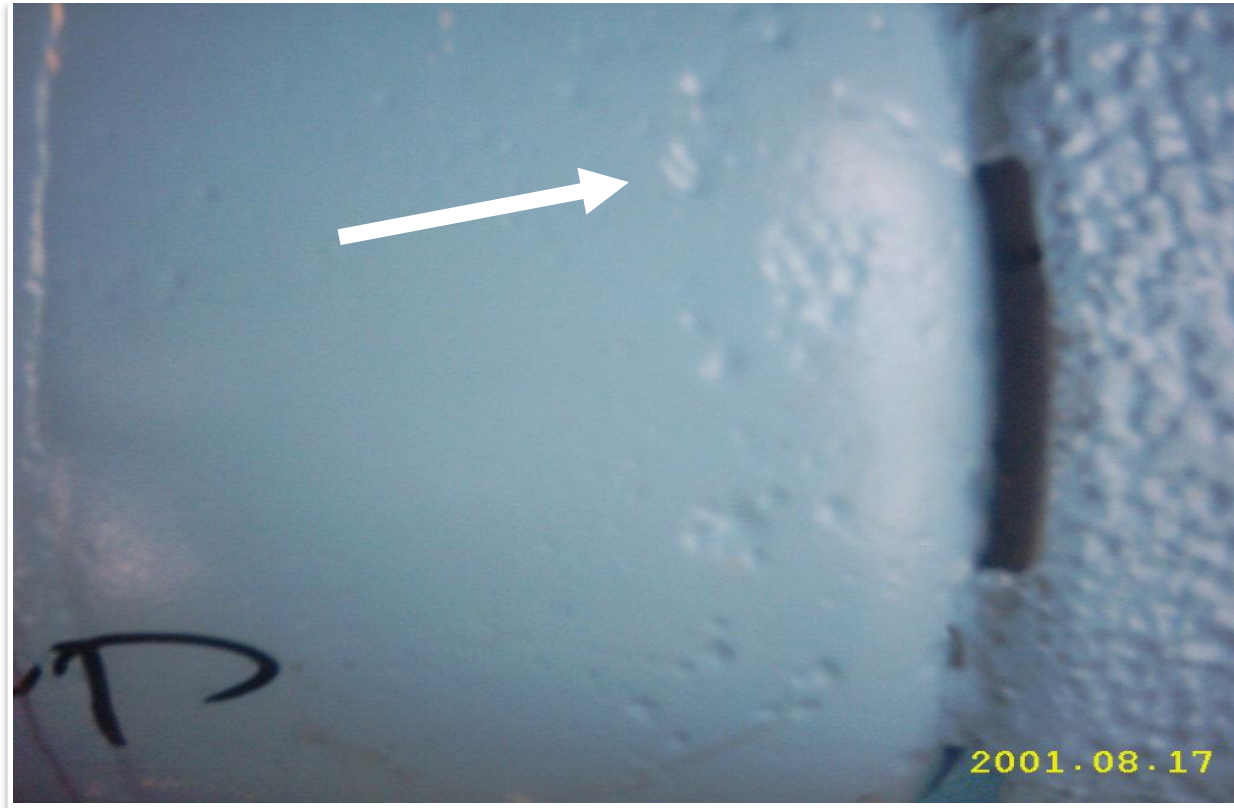
Body Leak



Weld Leak



LPG Cylinder Defects



Isolated Pits



3. Chop-chop Cylinders

- Backyard fabricated cylinder
- Assembled condemned cylinder



LPG Cylinder Defects

4. Deformed Collar/Footing



LPG Cylinder Defects

5. No Emboss



6. Bulging



LPG Cylinder Defects

7. Deformed/Defective Valve



8. Burned Cylinder



LPG Cylinder Defects

9. Incompatibility of Valve to Neck Ring



Important Reminder

Outdoor use only

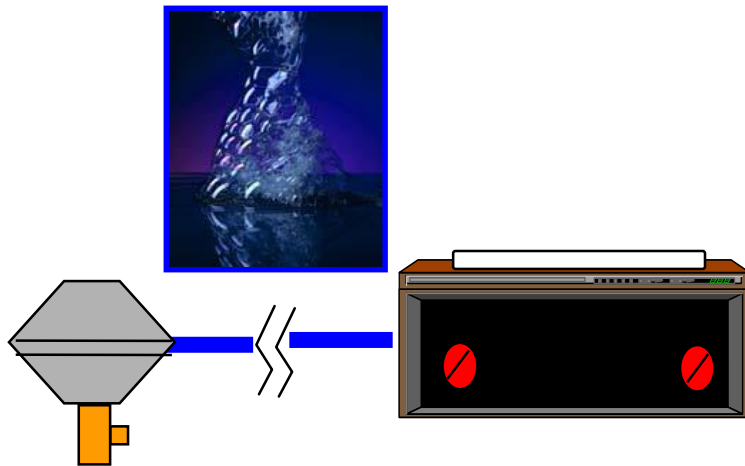


SAFETY TIPS



Safety Tips

- Do not invert LPG cylinders or let it lie horizontally on the floor

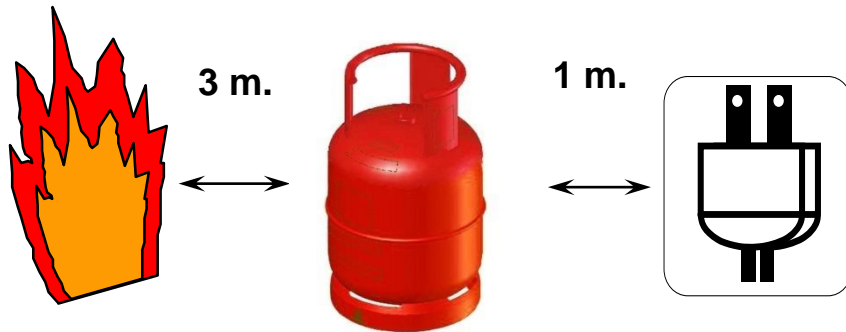
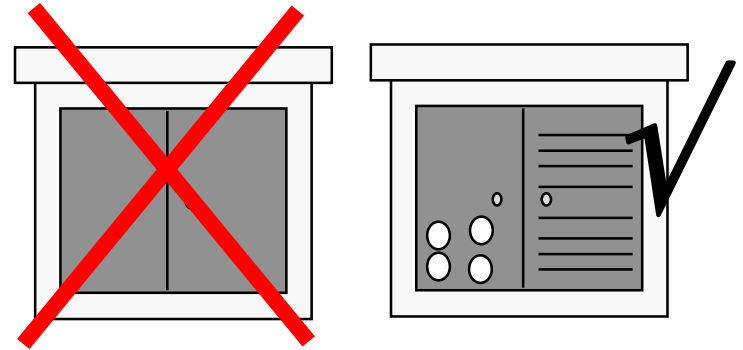


- Use only LPG resistant rubber hoses with clamps and regularly check for wear, cracks and leaks using soapy and water



Safety Tips

- Do not store LPG cylinders in enclosed kitchen cabinets

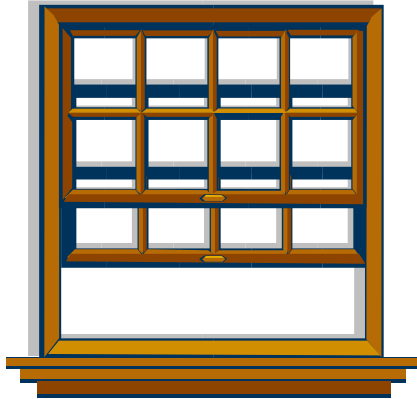


- Keep LPG cylinders away from electrical points and other sources of fire/ignition



Important Reminder

IF YOU SMELL GAS IN YOUR KITCHEN:



- Open all doors and windows to improve ventilation.

- Do not switch on/off electrical switches or connect/disconnect electrical plugs.



Important Reminder

- If leak is on cylinder, move cylinder out to open and ventilated place.
- Seek help from retail outlet where LPG was purchased or call the proper authorities



Important Reminder

LPG ANTI-LEAK DEVICE



Important Reminder

The so-called LPG anti-leak device is actually a mechanically operated gadget technically termed “excess flow limiter”. A steel ball automatically blocks off the passage of gas when there is a sudden surge thru the regulator, about 40% to 50% of the normal flow. It does not activate in the presence of pinholes and small cracks on your LPG hose.

The use of this device on household installation can even result in complete disregard for the most basic and simplest safety practices.



***“The more informed a consumer or buyer is,
the more difficult it is to sell them.”***

***- Joe Pulizzi in “Get Content,
Get Customers”***



Thank You!



(+632) 479-2900



robert.cardinales@doe.gov.ph



www.doe.gov.ph



//doe.gov.ph



@doe_ph

