

PHYSICS - X-PART-2 CLASS 55



3. Natural gases (CNG, LNG)

- \* liquefied natural gas (LNG) and compressed natural gas (CNG) from the natural gas obtained along with petroleum.
- \* The main component of all these is methane.
- \* These are used as fuels in vehicles, industries and thermal power stations.
- \* The importance of LNG is that natural gas can be liquefied and transported to distant places conveniently. It can again be converted into gaseous form at atmospheric temperature and distributed through pipe lines.

4. LPG

- \* The full form of LPG is liquefied petroleum gas.
- \* This is a colourless, odourless gas obtained through the fractional distillation of petroleum.
- \* Domestic LPG produces an odour since ethyl mercaptan is added as an indicator to detect gas leakage.
- \* The main constituent of LPG is butane.

L P G and Safety

- \* The expiry date marked on a cooking gas cylinder.

marked on the top of the cylinder	Expiry date
"A 24"	2024 months from January to March
"B24"	2024 months from April to June
"C 24"	2024 months from July to September
"D 24"	2024 months from October to December

- \* A,B,C,D indicate the month
- \* 24 indicate the year
- \* LPG is denser than air.

## BLEVE (Boiling Liquid Expanding Vapour Explosion).

\* If there is a fire due to leakage of LPG then due to the heat the cylinder/ tanker will also get heated. Owing to the excess heat, the LPG becomes gas increasing the pressure inside. The ability to expand is 250 times for the gaseous LPG. Therefore when LPG becomes gas, the container cannot accommodate the entire gas. This increases the pressure to a very high level causing a huge explosion. This is known as BLEVE.

1. Never switch on or switch off electricity when there is a leakage of LPG. Why?

\* It is because the fumes of gas are highly flammable and even smallest of sparks can ignite a huge fire.

2. If there is a leakage of LPG does it rise up or come down in the atmosphere? Why?

\* Come down in the atmosphere. LPG is denser than air, so any leakage will sink to the ground and accumulate in low lying areas and may be difficult to disperse.

3. What precautions are to be taken to avoid accidents due to LPG leakage?

\* Examine the rubber tube at regular intervals and ensure that it does not have a leakage.

\* Turn on the knob of stove only after the regulator is turned on.

\* Always store the LPG cylinder in an upright position and away from other combustible and flammable material.

\* Check for gas leaks regularly by applying soap solution on cylinder joints and suraksha pipes

4. If a gas leak is suspected or if the fire spreads on a cylinder, what else could be done?

\* If you are convinced that there is a gas leak, disconnect electricity from outside the home (switch off the main switches).

\* Switch off the regulator and shift the cylinder to an empty space. Keep the windows and doors open.

\* Request help from the Fire Force by calling in the toll free number 108.

\* Well trained rescue operators can put out the fire by covering the top end of the cylinder with wet sack to prevent the contact with oxygen.

\* If the fire is in flat or the top storey, then one should not try to escape using lifts. Only staircase should be used.

\* Cover the nose and the mouth with soft cloth to avoid the intake of smoke or gases.