

LPG – an Exceptional Fuel

LPG is the term to specify Liquefied Petroleum Gas (LPG) of superior quality and of specification suitable for Industrial, Commercial & Domestic use. Packed LPG has to conform to **IS 4576:1999** and have characteristics as per Annexure – I. LPG, or simply propane, is a flammable mixture of hydrocarbon gases used as a fuel in heating appliances and vehicles. It is increasingly used as an aerosol propellant and a refrigerant, replacing chlorofluorocarbons in an effort to reduce damage to the ozone layer. When specifically used as a vehicle fuel it is often referred to as Autogas.

LPG Properties

- LPG is in gaseous form at ambient temperature (25⁰ C) & in liquid form under pressure.
- LPG is colorless
- LPG is heavier than air
- Liquid LPG is lighter than water
- LPG is odorless, however for detection of leakage, Ethyl Mercaptan is added as an odorant.
- LPG has a low boiling point (- 18⁰ C)
- LPG has a narrow flammability range of 1.8% to 10% in air.
- LPG is non-toxic
- Liquid LPG can cause severe cold burns to the skin due to rapid vaporization & lowering of temperature.
- Flash point of LPG is – 40⁰ C.
- The approximate minimum ignition temperature of LPG is in the range of 410 c to 580

Advantages of LPG over other fuels:

- Clean Burning
- High energy value & gives good flame control
- Easy to store, No spillage.
- No soot, burners have longer life, hence maintenance is low.
- Environmental friendly fuel, with minimum sulphur contents & sulphur free emissions.
- Can be used for variety of applications
- Effects of corrosion are reduced
- Avoids scaling
- Effective & Efficient with direct firing systems as the heat loss is minimal.

Comparison with other fuels:

Fuel	K Cal / Kg (At room temperature)	Approx heat transfer efficiency
LPG	11,900	85%
SKO	11,100	65%
Light Diesel Oil (LDO)	10,700	65%
Furnace Oil (FO)	10,280	60%
Natural Gas (CNG)	8,600	85%
Coal	2,200 - 6500	25% - 40%
Firewood	1,500 – 4,500	15% to 20%
Electricity	860/Kw	90%

Applications

LPG has wide range of Commercial, Industrial, Domestic applications that include cooking, heat treatment, poultry rearing, in forklifts, textile processing, water heating (geysers & boilers) and many more. Some of the key applications are mentioned below:

Industry	Application
Hotels	Cooking boilers, washing laundry dryers, terrace heaters, utility carts, emergency generators, air conditioning, incinerators, mosquito repellent, terrace heaters, mobile catering units, geysers, baking.
Chemicals	Reactor, boiler, thermic fluid heater, hot air generator, oven dryer, evaporator, calcinatory
Food Processing	Baking, frying
Textile	Boiler, thermic Fluid Heater, Stentor, Singeing washing and drying
Metal	Gas carbonizing, paint heating, paint baking powder coating, galvanizing, gas cutting, melting, bolding, billet heating, heat-treatment, extrusion.
Ceramics	Glazing, décor painting
Plastics	Wire rope-extrusion, pipe extrusion
Glass	Melting, holding, polishing & shining framing
Poultry	Brooding, Aerosol Container Pressurizing
Automobile	Auto Fuel, heat treatment, paint heating and baking