



SNS COLLEGE OF TECHNOLOGY

DEPARTMENT OF MECHANICAL ENGINEERING

19MEB203 -THERMAL ENGINEERING

UNIT 1-Fuels & Combustion

Fuels -Characteristics



Characteristics of Good Fuels:

- High Calorific Values
- Moderate Ignition Temperature
- Low Moisture Content
- Low Ash Content
- Moderate Velocity of Combustion
- Should not produce harmful products
- Low Cost
- Easy Storage & Transportation
- Easily Controllable

Advantages of liquid fuels over solid fuels used in boiler.

➤ Advantages :

- 1) Liquid fuel having higher calorific value.
- 2) Less space is required for storage.
- 3) Easy control of combustion by stopping supply of fuel.
- 4) It is very clean fuel, dust free.
- 5) Reduction in cost of handling.
- 6) Easily transported through pipes.
- 7) During burning it does not form ash.

➤ Disadvantages :

- 1) Cost of liquid fuel is high.
- 2) The storage tank specially designed.
- 3) It has higher cost.
- 4) Danger of explosion.
- 5) Liquid fuels mostly we import from other countries. So we depends on other countries.

➤ Advantages of gaseous fuels :

1. They are free from solid and liquid impurity.
2. Maximum complete combustion of gaseous fuel is possible.
3. The rate of combustion and temperature in the combustion chamber can be easily controlled.
4. For complete combustion less amount of excess air is required.
5. Do not produce ash and smoke.
6. Large amount of heat and temperature is obtained at a moderate cost.

➤ Disadvantages :

- 1) They are readily inflammable.
- 2) They require large storage capacity.
- 3) The cost of gaseous fuel are more.