

Lecture - 8

KEROSENE

- Kerosenes are the distillate fraction of crude oil in the boiling range of 150-250°C.
- It cannot be burnt in the liquid state.
- It has to be in the form of vapour and should be mixed with the oxygen in the air in the correct ratio to form a combustible mixture.
- To achieve satisfactory combustion of kerosene used in a domestic burners, it is necessary to increase the evaporation rate considerably.

Manufacture of kerosenes

- Straight run kerosene cut is obtained from the Assam crude, which is unsuitable because of its aromatics content.
- Then the straight kerosene is treated with liquid sulphur dioxide (Edeleanu process) to reduce the aromatics content.
- At the boiling point of SO_2 (-10°C) aromatic and unsaturated hydrocarbons are completely miscible with liquid SO_2 .
- Another process to treat kerosenes from either sweet or sour crudes is hydrofining.
- Hydrofining of kerosenes is done where sweet crude is not normally present.

Composition of kerosenes

- Paraffins
- Napthenes
- Aromatics
- Non-hydrocarbon compounds containing
 - Sulphur
 - Nitrogen
 - Oxygen
 - Metals

Properties

- The smoke point of kerosene is an important characteristic.
- Smoke point depends on the type of the hydrocarbons present.
- Greater the elemental carbon present in aromatics, compared with parafins, it means high aromatic fuels will smoke more readily and hence aromatics have to be removed during the manufacture of kerosenes.

Uses

- Domestic fuel
- Used for cooking and lighting
- Manufacturing insecticides, herbicides, fungicides

Thank you