

## Physical Properties of Alkanes:

They are hydrophobic and dissolve in nonpolar or weakly polar solvents.

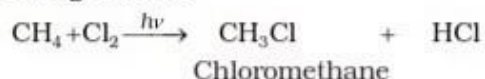
They are less dense than water.

The boiling point of alkane increases by 20-30 degree Celsius with each additional methylene group.

For isomeric alkanes, the boiling point decreases with branching due to an overall increase in surface area.

## Chemical Properties of Alkanes:

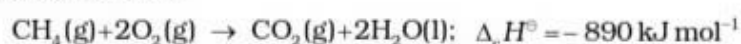
- **Halogenation:**



Halogen follow free radical mechanism and it is an example of chain reaction.

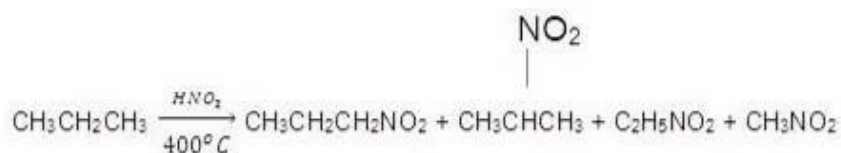
- **Combustion:**

On heating in presence of air, they are completely oxidized to carbon dioxide with large amount of heat.



- **Nitration:**

When an alkane is treated with concentrated nitric acid, then nitroalkane is formed.



- **Sulphonation:**

On heating with concentrated sulphuric acid sulphonation take place forming alkane sulphonic acid.

