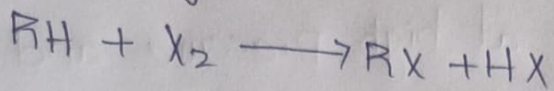
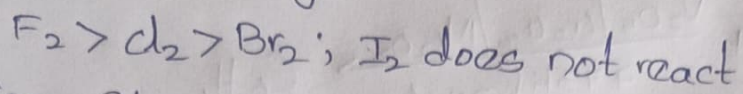


Chemical Properties of Alkane:

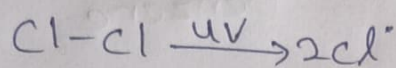
• Direct Halogenation



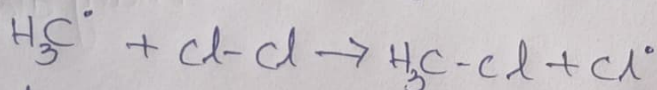
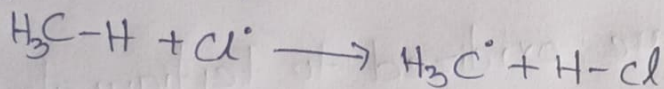
order of reactivity of X_2 :



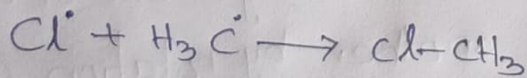
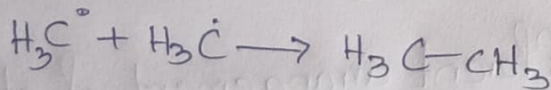
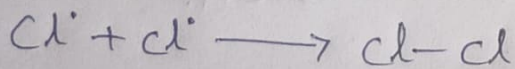
a. Initiation Step



b. Propagation step

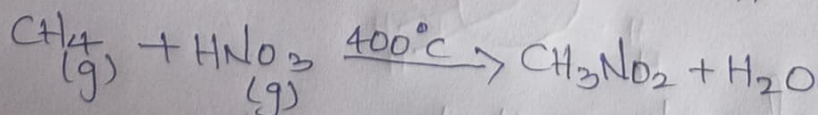


c. Termination step



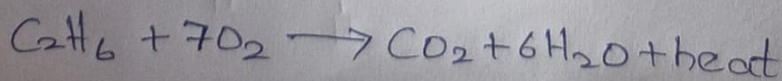
Nitration:

Nitration of alkane is made by heating vapours of alkanes and HNO_3 at about $400^\circ C$ to give nitroalkanes. This is also known as vapour phase nitration.



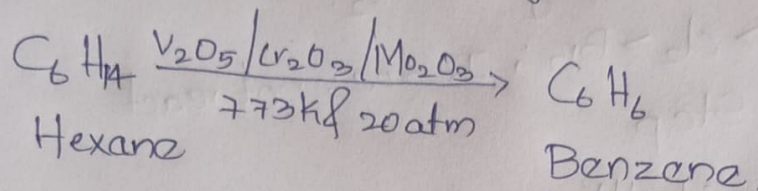
Combustion:

Alkanes burn readily with non-luminous flame in presence of air or oxygen to give CO_2 and water along with evolution of heat.



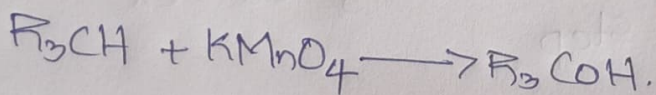
Aromatization:-

Alkanes having six to 10 carbon atoms are converted into benzene and its homologues at high pressure and temperature in presence of catalyst.



Oxidation of 3° alkanes?

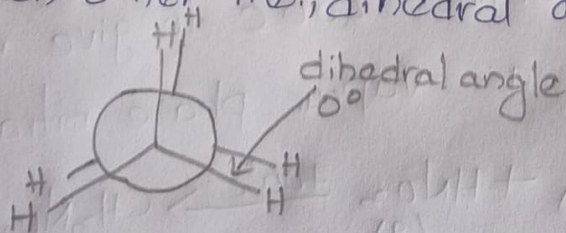
Tertiary alkanes are oxidized to tertiary alcohols by KMnO_4 .



Conformations of Alkanes:-

Conformations are the different arrangement of atoms that can be converted into one another by rotation about single bonds.

Eclipsed Conformation:- H atoms on two adjacent carbon atoms are closest to each other i.e., dihedral angle is 0.



Staggered Conformation:- H atoms on two adjacent carbon atoms are farthest to each other i.e., dihedral angle is 60.

