

SUBJECT - CHEMISTRY  
CLASS - BSc (Hons) PART-I

page - 01  
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PAPER: I  
GROUP: A

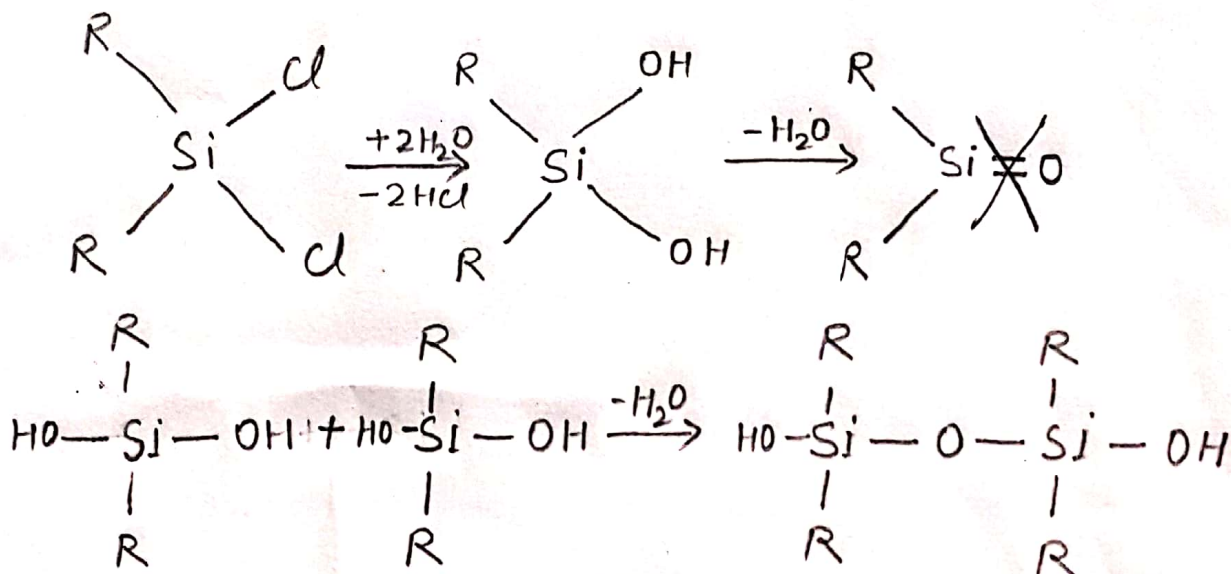
TOPIC: SILICONES

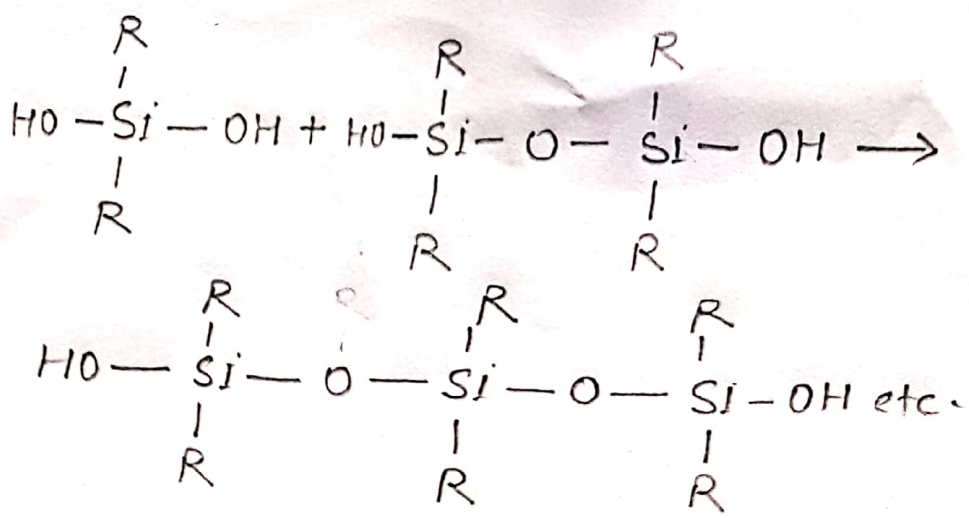
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Silicones

The Silicones are a group of organosilicon polymers. They have a wide variety of Commercial uses as fluids, oils, elastomers (rubbers) and resins. Annual production is estimated as about 300000 tonnes/year. They are now produced on a larger scale than any other group of organometallic compounds.

The Complete hydrolysis of  $\text{SiCl}_4$  yields  $\text{SiO}_2$ , which has a very stable three-dimensional structure. The fundamental research of F.S Kipping on the hydrolysis of alkyl substituted chlorosilanes led, not to the expected silicon compound analogous to a ketone but to long-chain polymers called Silicones





The starting materials for the manufacture of Silicones are alkyl or aryl substituted chlorosilanes. Methyl compounds are mainly used, though some phenyl derivatives are used as well. Hydrolysis of dimethyldichloro-silane  $(CH_3)_2SiCl_2$  gives rise to straight chain polymers and as an active OH group is left at each end of the chain, polymerization continues and the chain increases in length  $(CH_3)_2SiCl_2$  is therefore a chain building unit. Normally, high polymers are obtained.

