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Reactivity towards water

C, Si Ge → do not react water because they are non metals (C, Si) and Ge = metalloides

$$Sn + H_2O \xrightarrow{\Delta} SnO_2 + H_2$$

Sn react with steam and form SnO_2

Pb unaffect with water because it form protective layer of it's oxide

Reactivity towards oxygen

CO	CO_2
Mono oxide	Di oxide
SiO	SiO_2
(only exist at High temp.)	

CO_2 SiO_2 GeO_2 ⇒ acidic

SnO_2 PbO_2 ⇒ Amphoteric

पं जा बे अली गाना सुनाओ कार्ड्स
+3 | +4

Pb Zn Be Al Ga Sn Cr

all the possible oxides and Hydroxides are Amphoteric in nature

As_2O_3 Sb_2O_3 V_2O_5 ⇒ Amphoteric

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Carbide

- Ionic Carbide (S-Block and Al)
  - Methanide (C^{-4})
    - Be_2C
    - Al_4C_3
  - Acetylide (C_2^{-2})
    - CaC_2
    - BaC_2
  - Allylide (C_3^{-4})
    - Mg_2C_3
- Covalent Carbide (P-Block)
- Metallic Carbide (D-Block)

$Be_2C + H^{\pm}OH \longrightarrow Be(OH)_2 + CH_4$ [methane]

$Al_4C_3 + \overset{+}{H}-\overset{-}{O}H \longrightarrow Al(OH)_3 + CH_4$

$CaC_2 + \overset{+}{H}-\overset{-}{O}H \longrightarrow Ca(OH)_2 + CH{\equiv}CH$ [acetylene]

$BaC_2 + \overset{+}{H}-\overset{-}{O}H \longrightarrow Ba(OH)_2 + CH{\equiv}CH$

$Mg_2C_3 + \overset{+}{H}-\overset{-}{O}H \longrightarrow Mg(OH)_2 + CH_3-C{\equiv}CH$

[Propayne]

Be_2C

$Al_4C_3 \rightarrow CH_4$

CaC_2

BaC_2

Mg_2C_3

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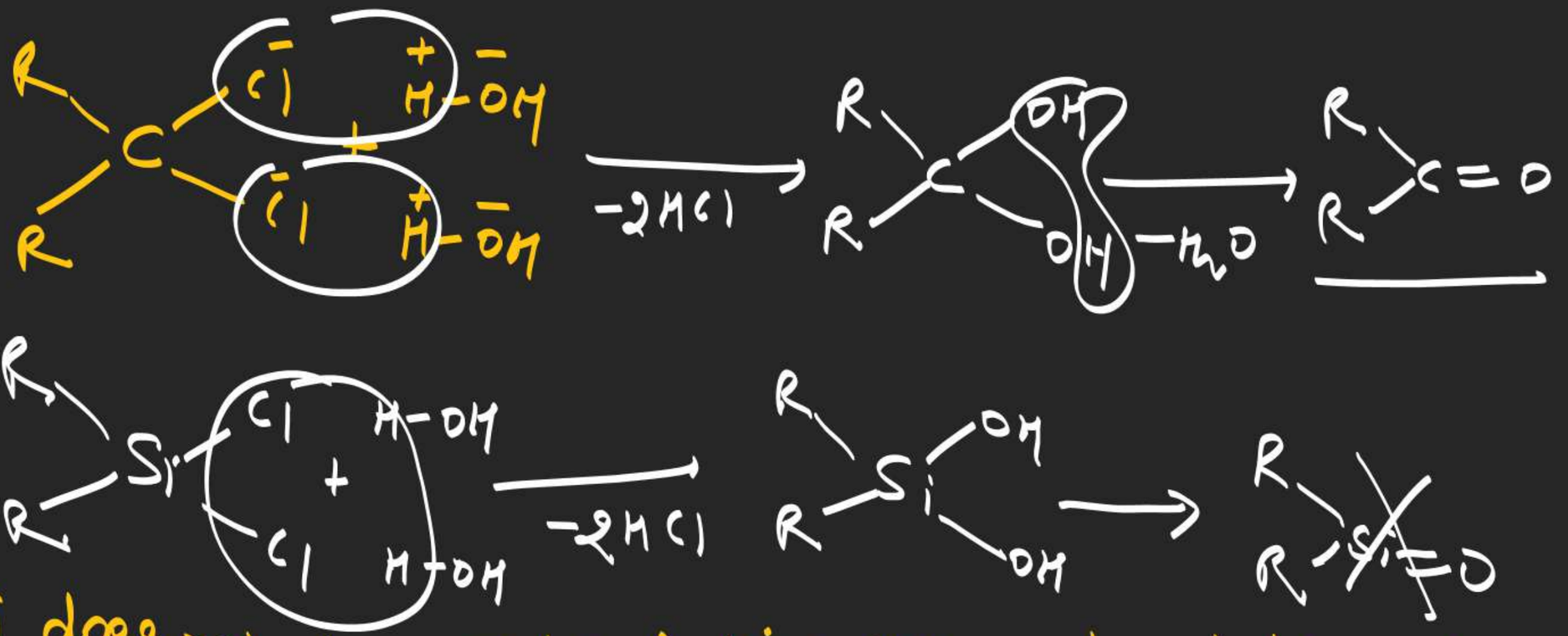
Silicone



Note ⇒ Si does not form π bond with oxygen due to large size so it undergoes in polymerisation and form diff type of silicone

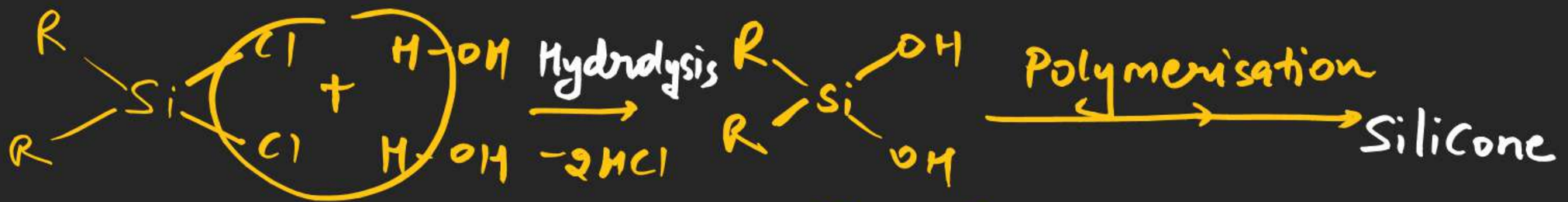
CH_4 = methane

SiH_4 = Silane

Higher silanes are not possible due to low catenation prop. of Si

SiH_4, Si_2H_6

C_6H_5 = aryl CH_3, C_2H_5 = alkyl



Di alkalyl dichloro silane

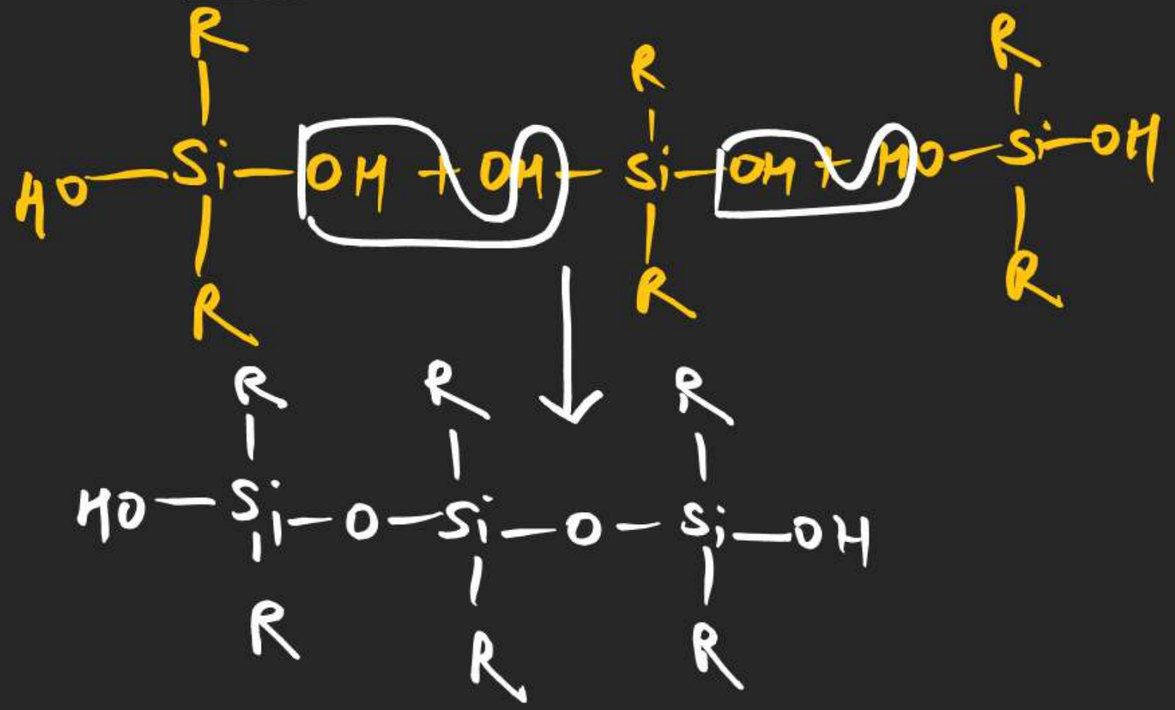
Silanol

When alkyl / Aryl Substitute Chloro silane undergoes in hydrolysis followed by polymerisation then diff type of silicone are formed.

Organo silicon Compound Having Si-O-Si linkage are called silicone.

type of silicone

① Linear silicone



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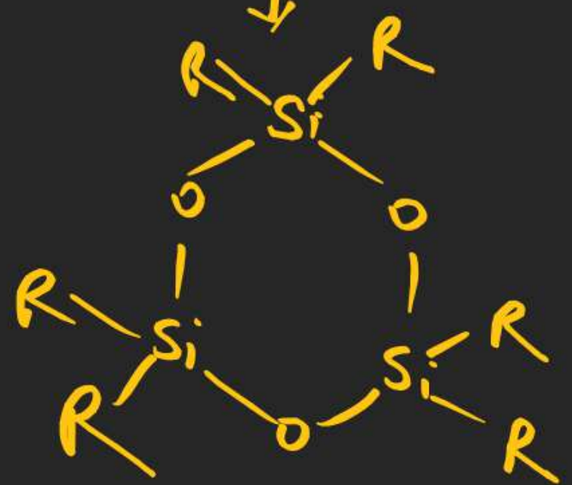
Cyclic Silicone



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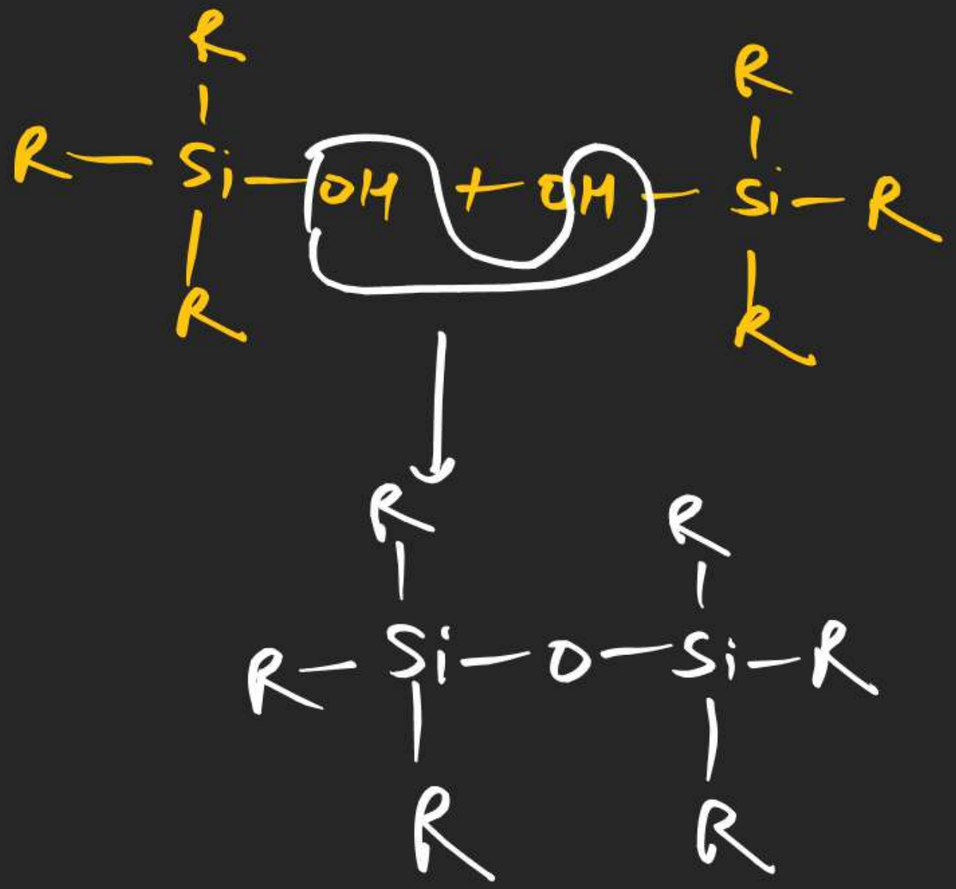
Dimer Silicone



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Cross linked | 3d silicone