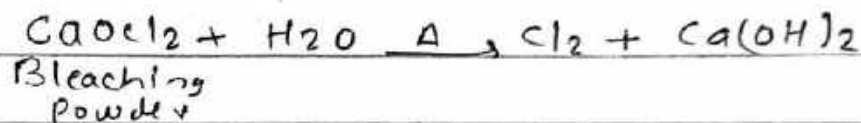


Chloroform: CHCl_3 (Trichloromethane):-

Chloroform can be prepared by heating ethanol or Acetone with bleaching powder paste

from ethanol:- It involves following reaction.

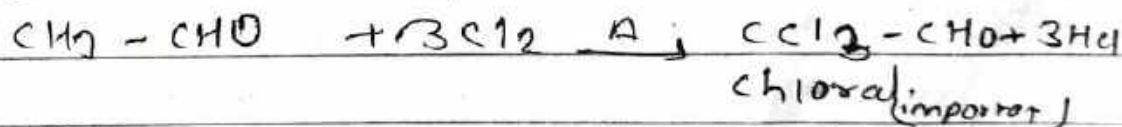
(i) Liberation of chlorine:-



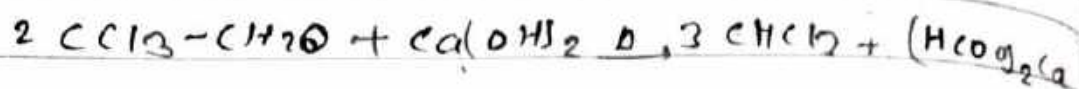
(ii) Oxidation of ethanol:-



(iii) Chlorination of ethanal:-



(iv) Formation of chloroform:

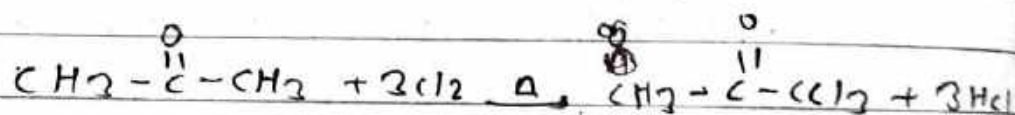


2. # From acetone

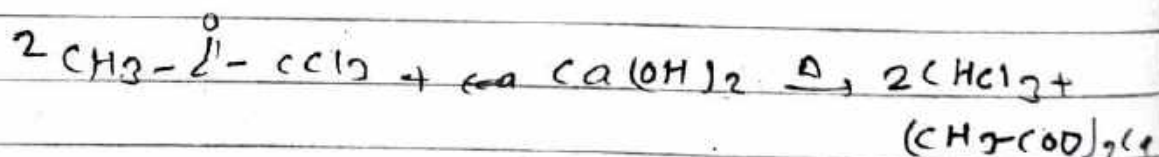
(i) Liberation of chlorine:-



(ii) Chlorination of acetone:-



(iii) Formation of chloroform:-



* physical properties of chloroform.

(1) Chloroform (CHCl_3) is colourless liquid with characteristic sweet smell.

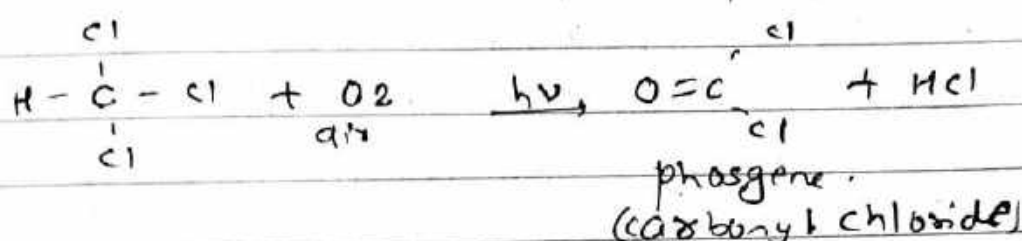
(2) It's boiling point is 61°C .

(3) It is insoluble in water.

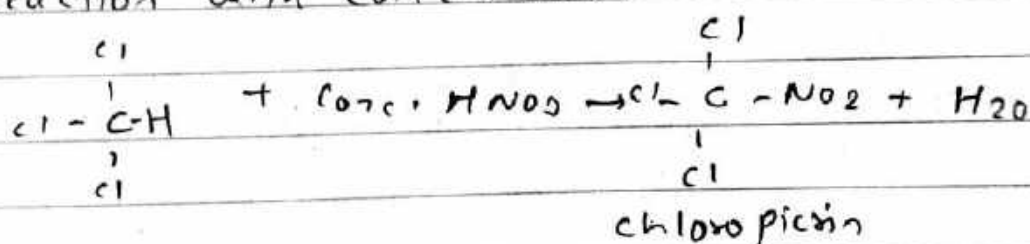
* Chemical properties of chloroform.

① Oxidation:

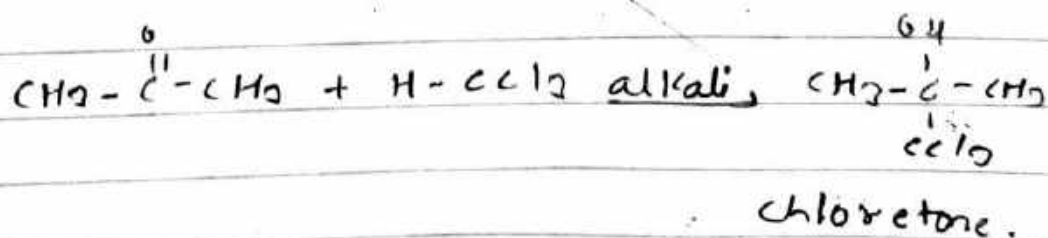
When chloroform (CHCl_3) is exposed to atmospheric air in presence of sunlight, it oxidize to a poisonous compound called phosgene so, chloroform is not used for anaesthetic purpose.



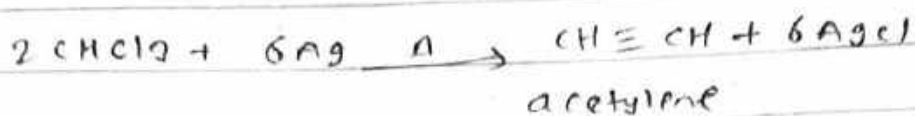
② Reaction with conc. HNO_3



③ Reaction with acetone



④ Reaction with silver powder :-

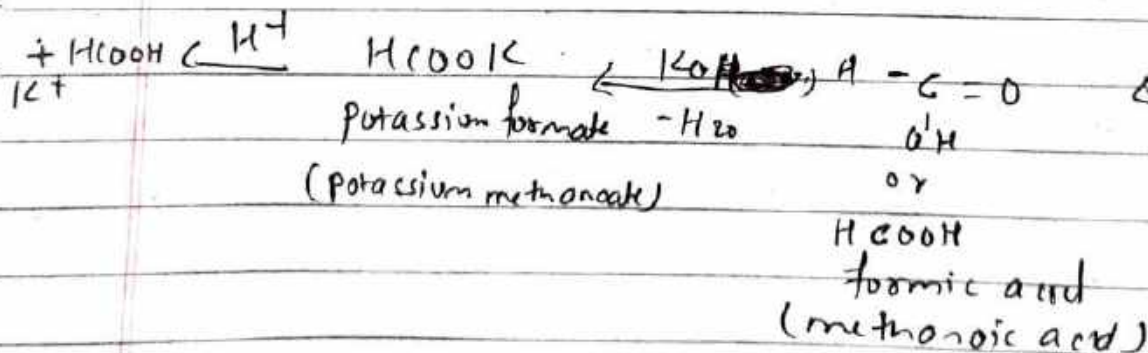
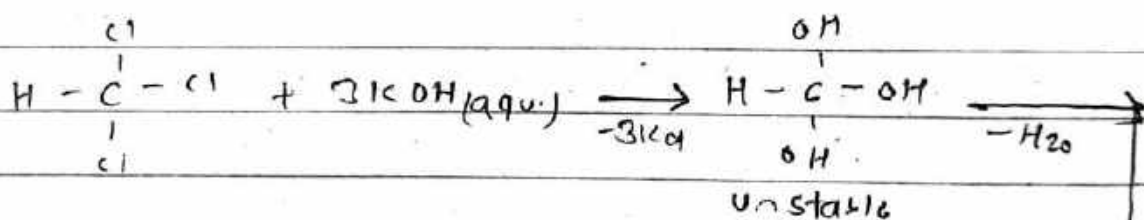


Note :-



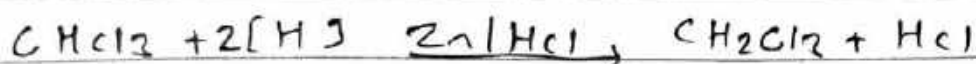
⑤ Reaction with aqueous alkali (hydrolysis) :-

When chloroform is treated with aqueous alkali like KOH, potassium formate (HCOOK) is formed which on acidification gives formic acid.

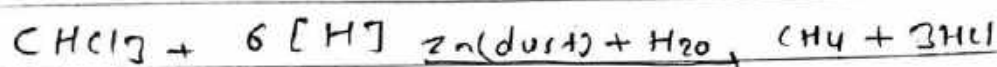


⑥ Reduction:

When chloroform is reduced with zinc and hydrochloric acid to dichloromethane is formed



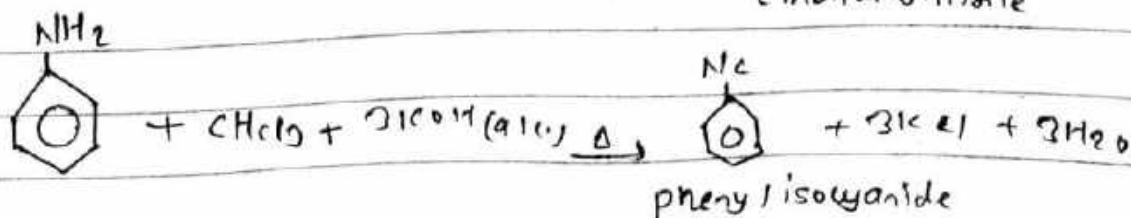
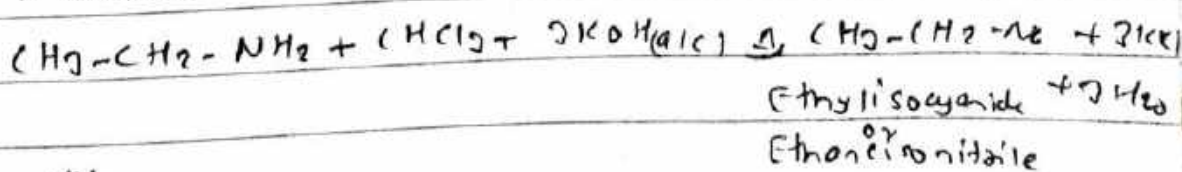
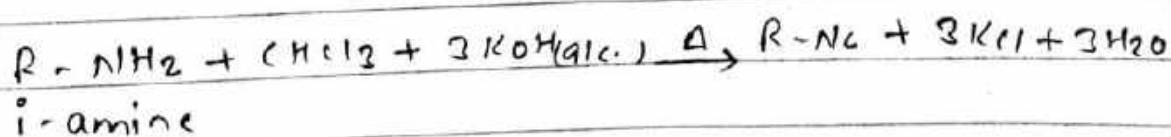
But if chloroform is reduced with zinc dust and water, methane is formed.



⑦ Carbylamine reaction (Isocyanide test reaction)

When primary amine is heated with chloroform and alcoholic alkali, isocyanide with offensive smell is formed. This reaction is not shown by secondary and tertiary amine so it is used as test reaction.

for primary amine:



⑧ Reimer-Tiemann's reaction:-

when phenol is treated with chloroform and alcoholic alkali at 60°C to 70°C salicylaldehyde is formed. This reaction is called Reimer-Tiemann's reaction.

