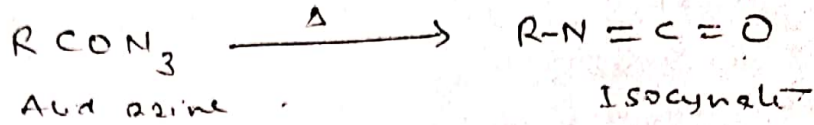


Curtius reaction or Curtius rearrangement

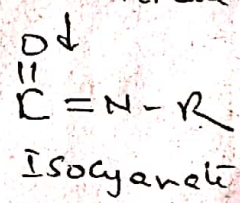
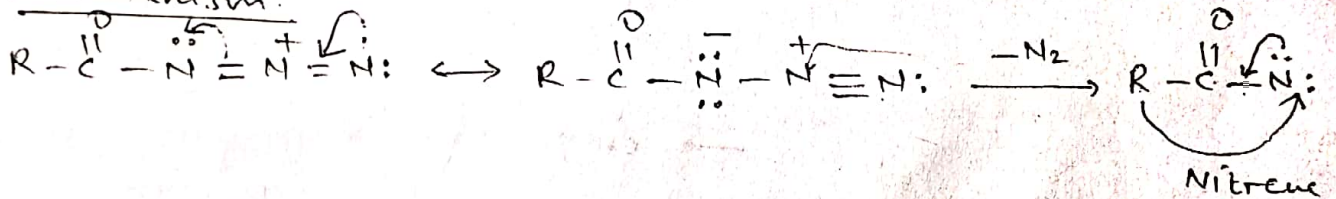
The decomposition of acid azides into isocyanate on heating acid azides is called Curtius rearrangement -



Acid azide can be prepared by treatment of acid chloride with sodium azide or by the reaction of hydrazine with esters followed by treatment with HNO_2



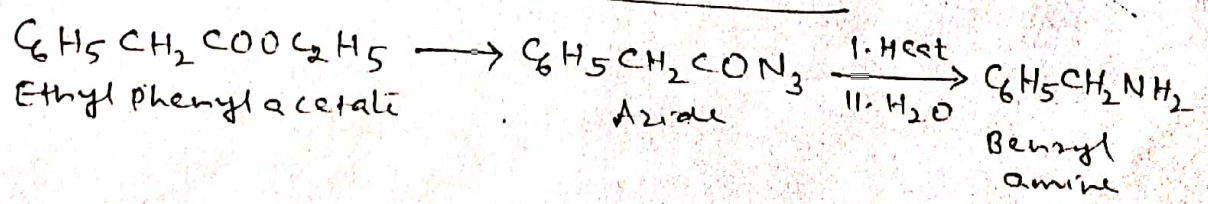
Mechanism.



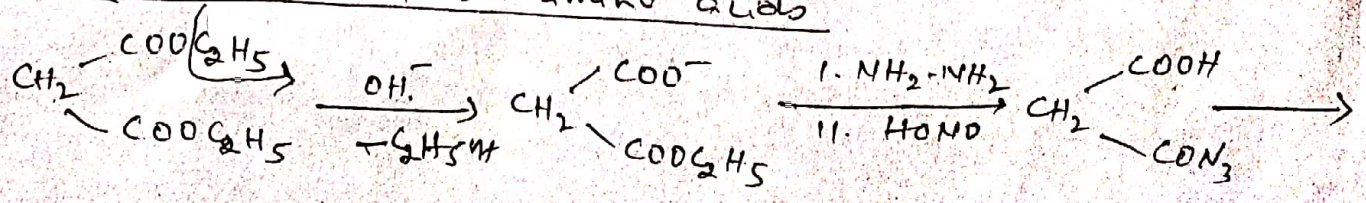
~~The isocyanate itself may be isolated by carrying out the reaction in chloroform solution but generally alcoholic solutions are used in which it forms amine or urea and urethane (carbamate) respectively.~~

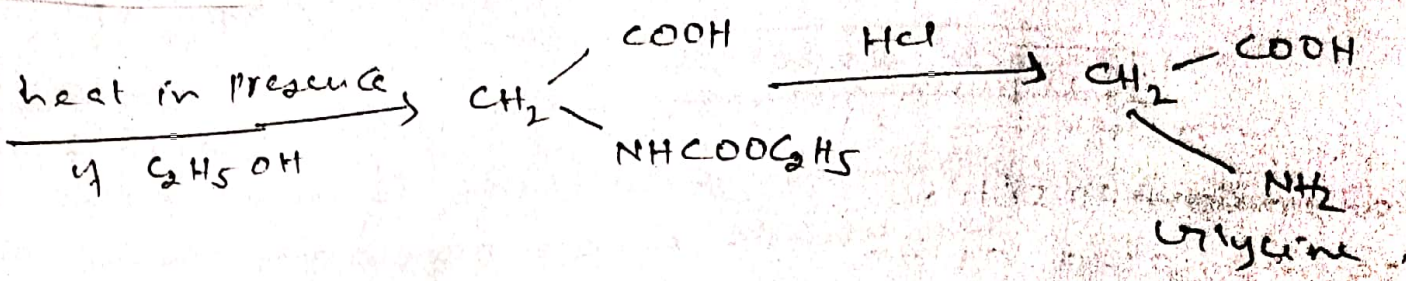
Application of Curtius rearrangement

(i) Preparation of primary amines



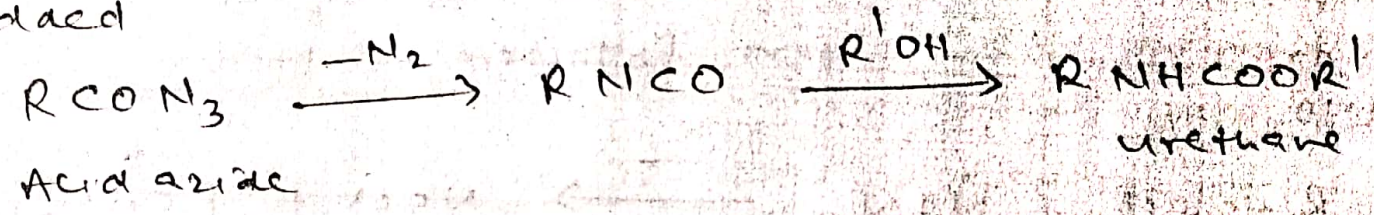
(ii) Preparation of α-amino acids





17) Preparation of urethanes

N-Substituted urethanes may be prepared by the Curtius reaction. The acid azide is refluxed in benzene solution and then an alcohol is added.



18) Preparation of aldehydes

α, β -unsaturated acids and α -hydroxy acids can be converted into aldehyde by Curtius reaction.

