

Study Notes On Wolff Kishner Reduction

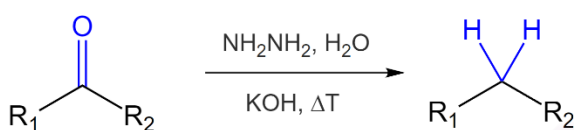


WOLFF-KISHNER REDUCTION

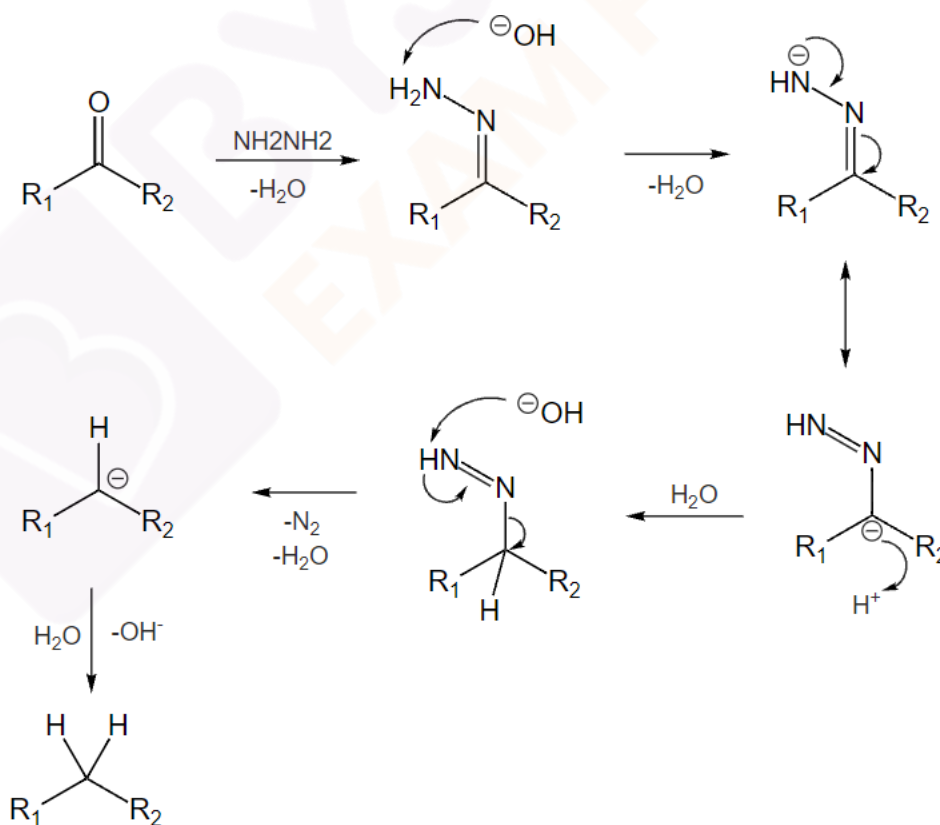
The reaction involves reduction of the carbonyl group of aldehyde and ketones to methylene groups (or, alkanes). This is a base catalysed reaction.

In this reaction, condensation of carbonyl compound with hydrazine occurs to form hydrazone; and when treated with base, it induces the reduction of carbon along with oxidation of hydrazine to gaseous nitrogen and yield corresponding alkane.

General reaction-

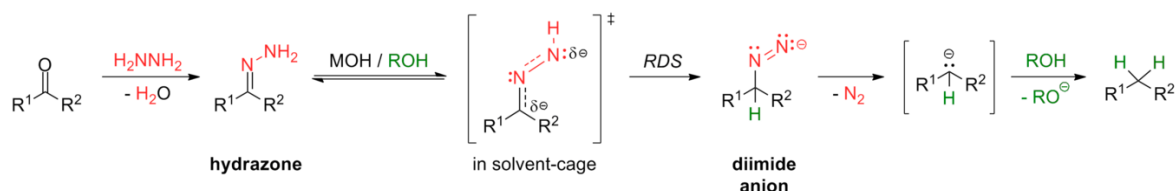


Reaction mechanism-

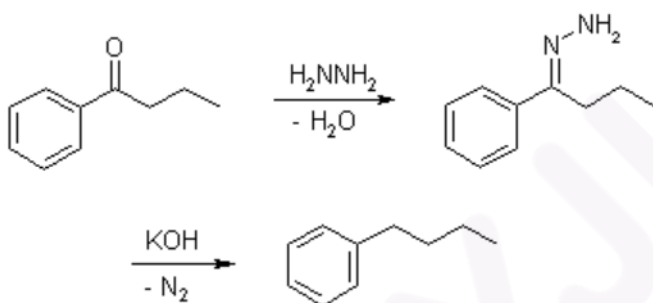


Or,

the mechanism of Wolff Kishner reduction can also be represented as-



Example-



Notes-

1. This reaction is very specific for reduction of a carbonyl group. Another functional group present in reactants remains intact.
2. Unlike Clemmensen reduction, Wolff-Kishner does not fail with acid sensitive compounds or high molecular weight compounds.
3. Wolff-Kishner reduction can also be used for synthesis of long chain alkyl groups in aromatic rings.

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