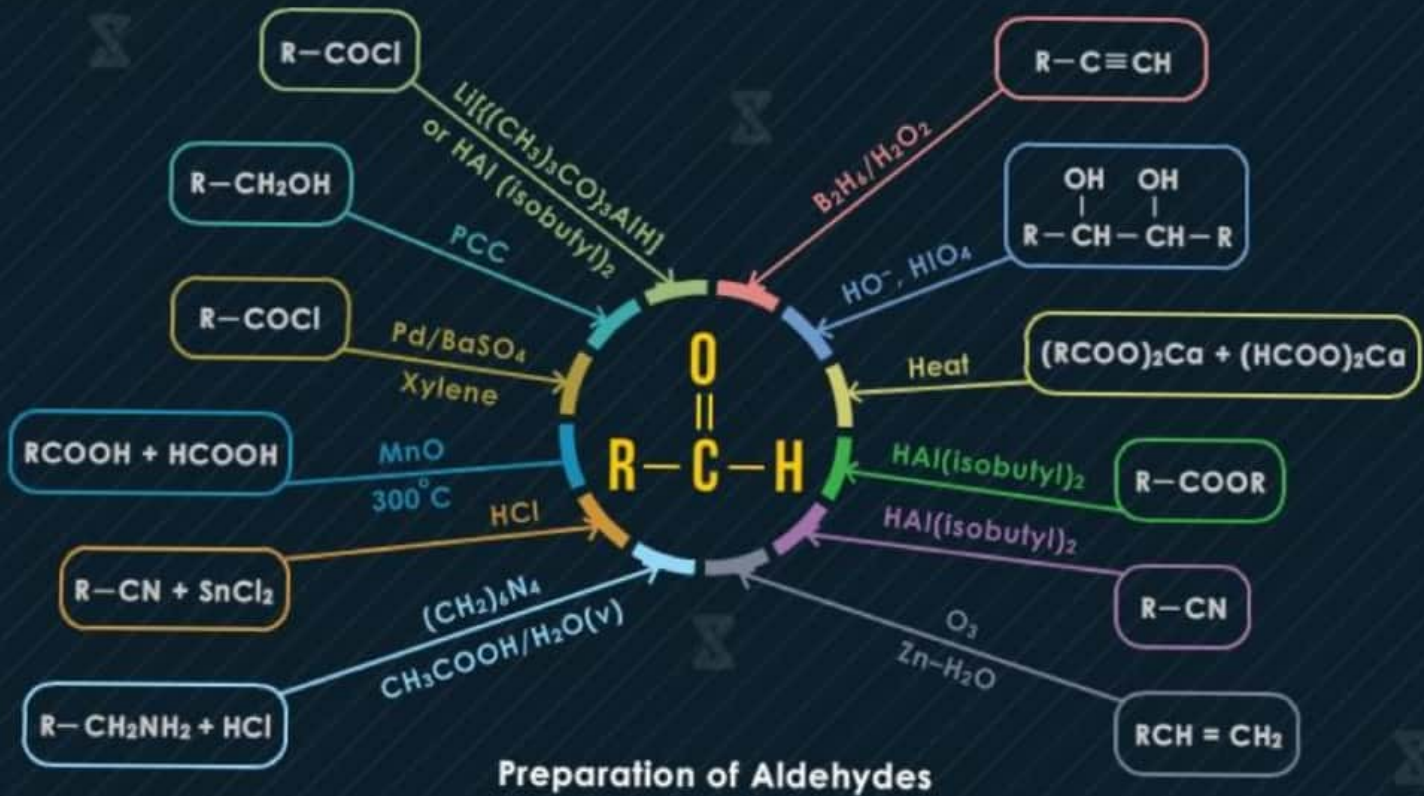


ALDEHYDE & KETONES

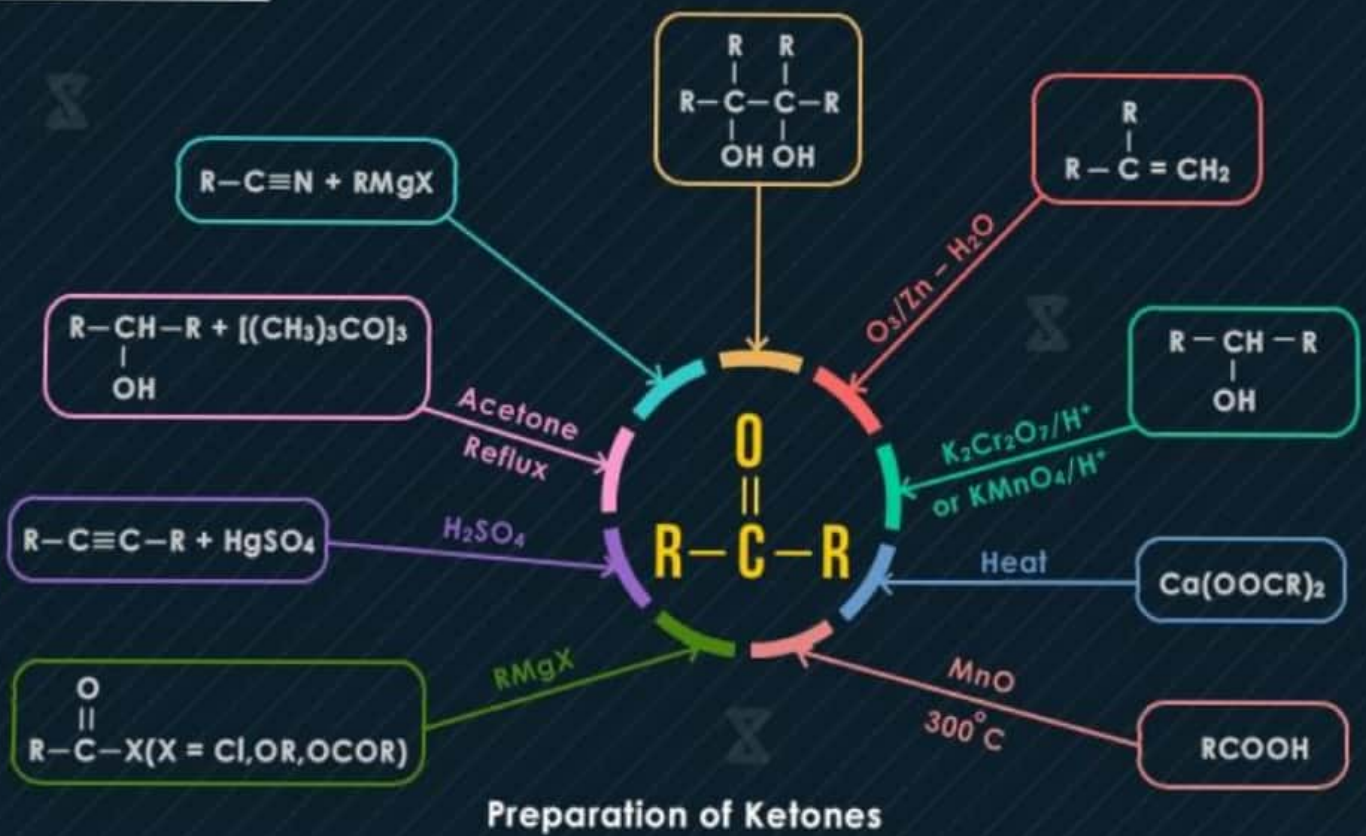
Aldehydes

PREPARATION



Ketones

PREPARATION

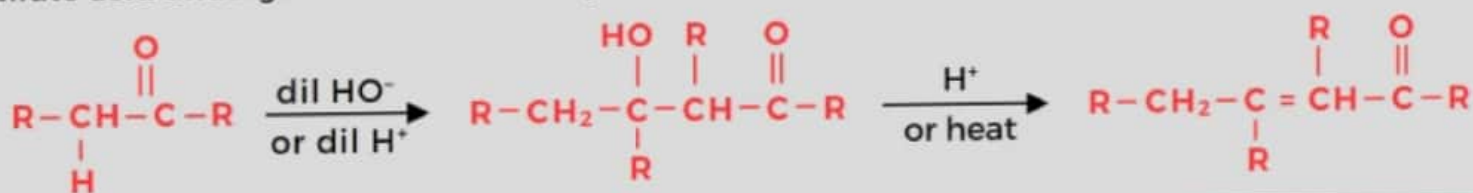


IMPORTANT REACTIONS ALDYHYDE AND KETONE

ALDOL CONDENSATION



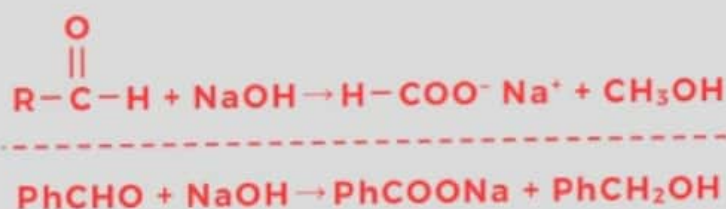
Aldehydes or ketones containing at least one α -hydrogen on treatment with dilute alkali or dilute acid undergo condensation to produce β -hydroxy aldehyde or β -hydroxy ketone.



CANNIZARO REACTION

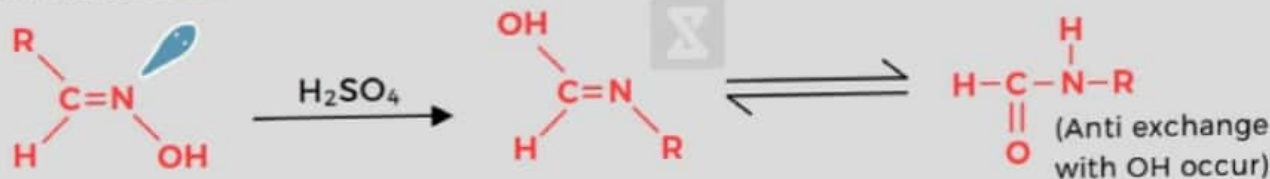
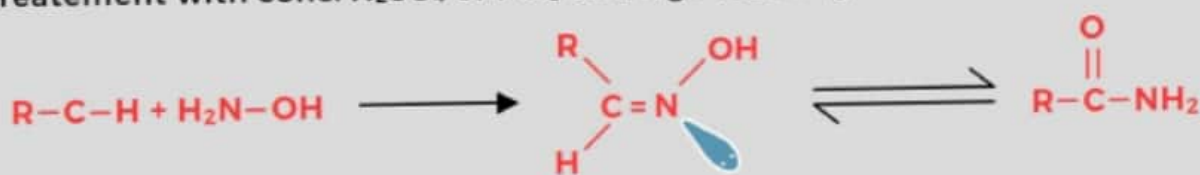


Aldehydes lacking α -hydrogen, when treated with concentrated solution of strong base, undergo mutual oxidation reaction.



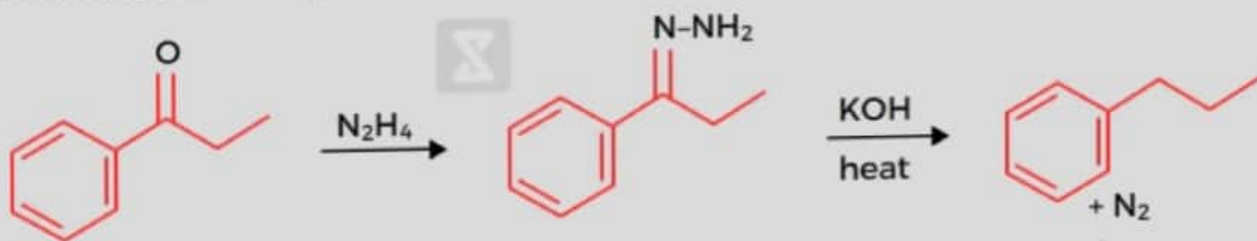
BECKMANN'S REARRANGEMENT

Aldehydes or ketones on treatment with hydroxyl amine gives oximes. Oximes on further treatment with conc. H_2SO_4 or PCl_5 undergo rearrangement as:



WOLFF – KISHNER

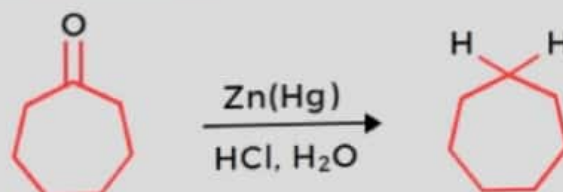
Ketone or aldehyde is converted to its hydrazone (by reaction with hydrazine) and is then treated with a strong base, which generates the reduced product.



The mechanism of hydrazone formation is analogous to imine formation.

CLEMMENSEN REDUCTION

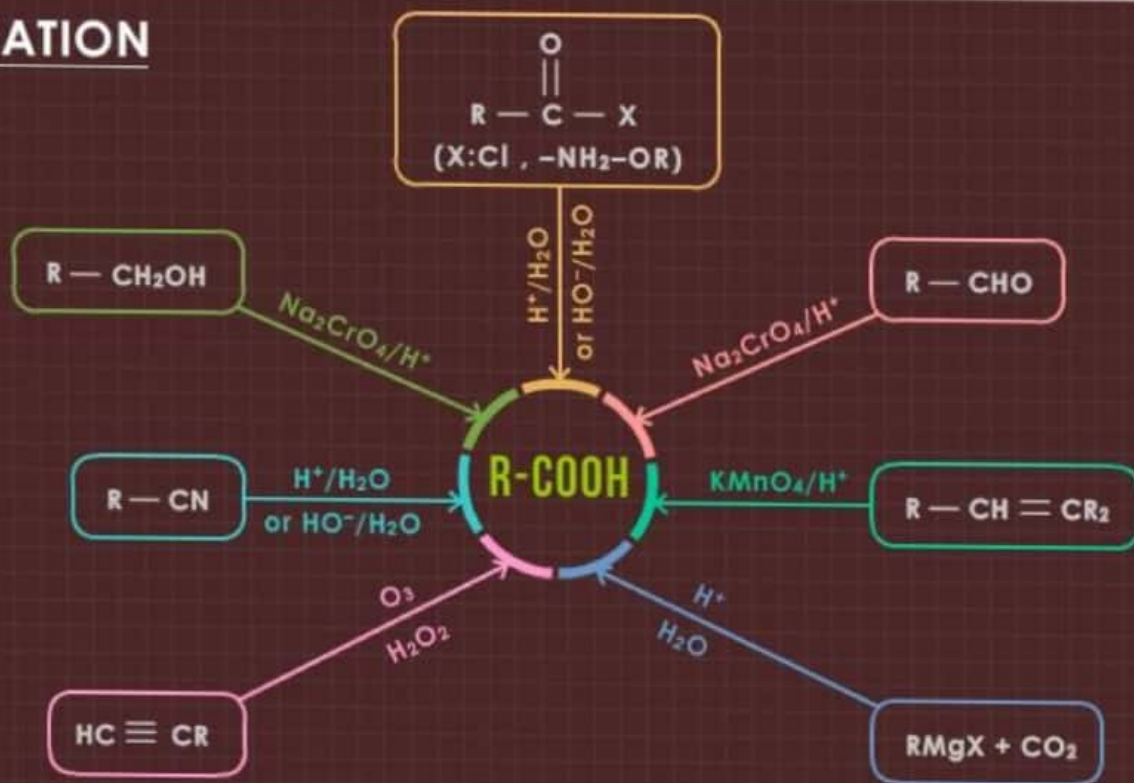
This was used in the reduction of acyl benzenes into alkyl benzenes, but it also works for other aldehydes and ketones.



CARBOXYLIC ACIDS



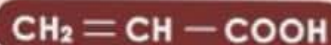
PREPARATION



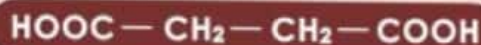
NOMENCLATURE

The **Systematic IUPAC name** consists of the corresponding hydrocarbon, in which the final -e is replaced with the suffix -oic (-dioic for dicarboxylic) and the word acid. When the carboxyl group is attached to a ring, the ending -carboxylic acid is added to the name of the parent structure. Many carboxylic acids have common names.

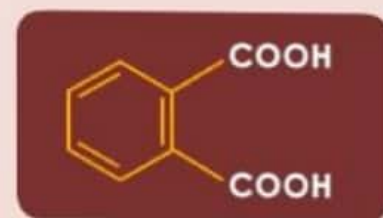
EXAMPLE :



Propen-oic acid
(acrylic acid)



Butan-di-oic acid
(succinic acid)



Benzene-1,2-dicarboxylic acid
(succinic acid)

USES

- **VINEGAR CONTAINS ETHANOIC ACID**
Ethanoic acid is used in the manufacturing of rayon



- **SOUR FRUITS CONTAIN CITRIC ACID**
Fruits like lemon and orange contain citric acid



- **ASPIRIN IS A CARBOXYLIC ACID**
It is used for pain relief and prevention of heart attacks



- **VITAMIN C CONTAINS ASCORBIC ACID**
needed to maintain health of skin, cartilage and bone

