# The saturated hydrocarbon containing nitro group
an called Nitro compound.

to which nitro group is attached initro compound are classified as pringry, secondry and tertiary nitro compound

Eg (H3-(H2-N02 CH3-(H3 (H3-2-N02 CH3-2-N02)

Mid do ethane 2-Nitropropone 2-Metry)-2-Nitro

# General Method of preparation

1 From Haloalkone.

R-x + AgNIDE(a1c.) -> R-NIO2 + Agx. CH2-(H2-CI+ AgNO2(a1c.) -- ) (H2-CH2-NO2 + Agc)

O From alkone! when alkane is heated with turning nitrice acid, nitro alkane is formed.

CHU+ HNOS 400'C , CH3-NO2+ H20
A Nitromethane.

if alkane containing more than one carbon atom is present, in inture of Nitro allegne along with some other compound like (02, NIO2 etc are formed.

CH3-(H3+ HNIOR -400'C) (H3-(H2-NO2+ (H3-NO2+
fuming )

# physical properties of Nitro compound.

- 1 Nitroalkones are colourless liquid with sweet smell-
- 1 Nitroalkones have high boiling point than alkone because they are joint compound.
- @ Mitroallance are sprangly or slightly soluble in water

# chemical properties of Mitroalkones

-> Reduction.

3

- D catalytic reduction: R-NO2 + H2 Ni , R-NH2 + 2H20
- @ Reduction with netal hydride: R-NO2 + 6(H) Linity, R-NH2 + 2 H20
  - @ Reaction in acidic medium: R-NO2+6(H) SntHelly R-NH2+2H20
- P-NO2 + (H) Zn+ NH4CI (agu.), R-NH-OH + H2O

#	Nitro benzene 11	=

<u>_</u>	Reaction	for	labor otros	preparation.
		101	id Sold lary	Par per reamon,

0 + 1000. HMD3 1000. H2504 0 + H2.

(1)

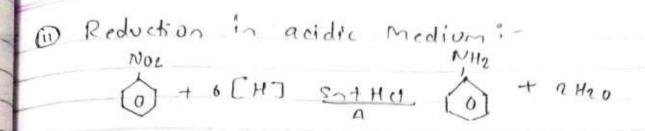
# physical properties.

- 1) It is pole yellow coloured only liquid with Litter almost smell.
- @ It is solve Inwater.
- @ 9+'s boiling point i's 210c

# chemical property

D Reduction's

@ Reduction with metal lydride.



Reduction in Neutral medium.

NO2

+ U[H] Zn+ NHUMAN).

Hydrony Phenylamine

Reduction in alkaline medium:

An alkaline medium:

Nitrobenzene undergoes by more conax reduction producing different reduced product depending on reducing agent used

Nas Asos+NaoH

O

No2

2n+NaoH, (H3oH)

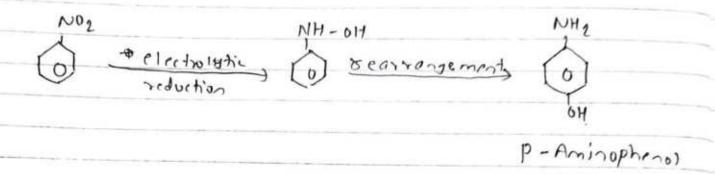
2n+NaoH, (H3oH)

The manner of the medium:

An alkaline medium:

An alkal

## @ electrolytic reductionis



# Electrophilic substitution reaction:

electrophilic Substitution reaction occurs at meta position because resonance caused by electron with drawing nitro group generate positive charge at ortho and pora position so electron density is comparatively! higher at metaposition Therefore nitrogroup in Nitro benzene is called meta direction of ring deactivating group.

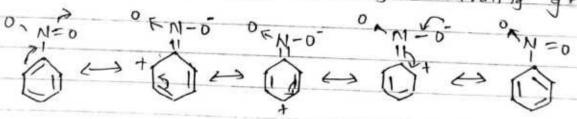
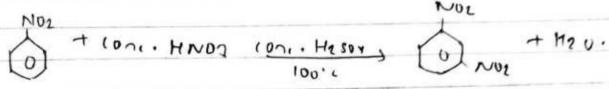


Fig: Resonance str. of Mitro benzene

# Reaction.

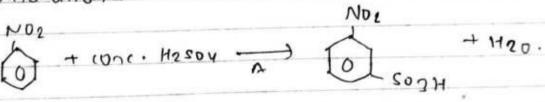
M-Bromonitoobenzene

(ii) Mitration:



m - Di Nitro binzene.

(11) Sulphoration :



Mr Mitrobenza cuphonic acid