

## Quadrant II – Transcript and Related Materials

Programme: Bachelor of Science (Second Year)

Subject: Chemistry

Paper Code: CHC103

Paper Title: Physical Chemistry and Organic Chemistry

Unit: Amines and Diazonium Salts

Module Name: Diazonium Salts: Preparation from aromatic amines and Conversion to benzene

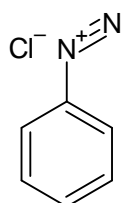
Name of the Presenter: Ms. Harsha Achari

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### Notes:

- A Diazonium Salt is an organic compound with general formula  $R-N_2^+ X^-$   
R- Alkyl/ Aryl Group, X- Organic or Inorganic anion ( $Cl^-$ ,  $Br^-$ ,  $BF_4^-$ ).

Example:

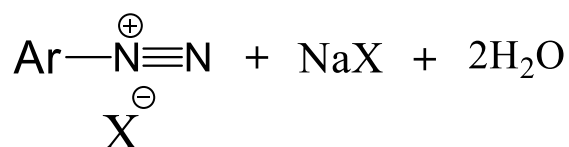
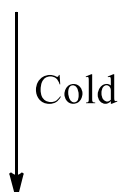


Benzenediazonium chloride

### Preparation from Aromatic Amine

- When a primary aromatic amine is dissolved in cold aqueous mineral acid and is treated with Sodium Nitrite, a Diazonium Salt is formed.

Diazotisation :



Diazonium salts undergo two types of reactions:

1. Replacement- Nitrogen atoms are lost as  $N_2$  gas.
2. Coupling- Nitrogen atoms are retained in the product.

Conversion to Benzene (Replacement by hydrogen)

- Diazonium salts can be reduced by Hypophosphorus acid ( $H_3PO_2$ ) to give the respective aryl group.

Reaction:

