A nucleophilic aromatic substitution is a nucleophilic substitution reaction in which it is a leaving group on an aromatic ring that is replaced by the nucleophile.

eg. 1:

\[
\text{Br} \quad \xrightarrow{\text{NaNH}_2} \quad \text{NH}_2
\]

solvent: \( \text{NH}_3 \) (l)

net reaction:

\[
\text{Br} \quad + \quad \text{NH}_2 \quad \xrightarrow{} \quad \text{NH}_2 \quad + \quad \text{Br}^-
\]

eg. 2:

\[
\text{Cl} \quad \xrightarrow{\text{NaOH}} \quad \text{OH}
\]

solvent: \( \text{H}_2\text{O} \)

net reaction:

\[
\text{Cl} \quad + \quad \text{OH}^- \quad \xrightarrow{} \quad \text{OH}^- \quad + \quad \text{Cl}^-
\]

see also benzyne mechanism, \( \text{SN}_2 \text{Ar mechanism} \), nucleophilic aliphatic substitution

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