In many an elementary reaction, a nucleophilic atom in one reactant reacts with an electrophilic atom in another. The reactant bearing the nucleophilic atom is said to be acting as the nucleophile in the reaction and the one bearing the electrophilic atom the electrophile.

eg. 1:

\[ \text{OH}^- + \text{CH}_3\text{Br} \rightarrow \text{H}_2\text{O} + \text{CH}_3\text{Br}^- \]

In this reaction \(^{-}\text{OH}\) is the nucleophile and \(\text{CH}_3\text{Br}\) the electrophile.

eg. 2:

\[ \text{CH}_2=\text{CH}_2 + \text{HCl} \rightarrow \text{CH}_3\text{CH}_2\text{Cl} + \text{H}^+ \]

In this reaction propylene (1) is the nucleophile and HCl the electrophile.

eg. 3:

\[ \text{THF} + \text{BH}_3 \rightarrow \text{THF}^+ + \text{BH}_3^- \]

In this reaction, THF (2) is the nucleophile and BH\(_3\) the electrophile.

In an intramolecular reaction, the nucleophilic atom and the electrophilic atom that react with each other are in the same species.

eg:

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**Contributors**

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