If electrophilic aromatic substitution of a monosubstituted benzene is faster than that of benzene under identical conditions, the substituent in the monosubstituted benzene is called an activating group.

eg:

Under identical conditions, Reaction 2 is faster than Reaction 1. Thus, the methyl group is an activating group.

All activating groups are electron-donating groups.

Common activating groups:

- OR \((R = \text{H, alkyl, aryl, acyl})\)

- \(\text{NR}_2\) \((R = \text{H, alkyl, aryl, acyl, or any combination thereof})\)

- \(\text{R} \) \((R = \text{alkyl, aryl})\)

Contributors

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