

Nucleophilic Aromatic Substitution

Note the differences between electrophilic and nucleophilic aromatic substitutions. Electrophilic substitutions are favored by electron-donating substituents, which stabilize the carbocation intermediate, while nucleophilic substitutions are favored by electron-withdrawing substituents, which stabilize a carbanion intermediate. The electron-withdrawing groups that deactivate rings for electrophilic substitution (nitro, carbonyl, cyano, and so on) activate them for nucleophilic substitution. What's more, these groups are *meta* directors in electrophilic substitution but are *ortho-para* directors in nucleophilic substitution.

