In-chapter exercises

E6.1:

\[
\begin{align*}
\text{Left side:} & \quad \text{the nucleophile is an amine, the electrophile is the methyl carbon, and the leaving group is a sulfide.} \\
\text{Right side:} & \quad \text{The nucleophile is a thiolate ion, the electrophile is the carbon atom of an alkyl diphosphate, and diphosphate is the leaving group.}
\end{align*}
\]

E6.2:

E6.3

End-of-chapter problems

P6.1:

Left side: the nucleophile is an amine, the electrophile is the methyl carbon, and the leaving group is a sulfide.

Right side: The nucleophile is a thiolate ion, the electrophile is the carbon atom of an alkyl diphosphate, and diphosphate is the leaving group.

P6.2:

a)
b) In step 1, the nucleophile is the hydroxide oxygen, and the electrophile is the carbonyl carbon of the thioester.

P6.3:

a)

b)

c)

d)

e)
f) Bold dots show the two carbons that form a new bond in this reaction step.

P6.4:

The C to D step has the highest activation energy, and thus is the slowest, rate-determining step.

P6.5:

Contributors