Solution

a. There are ethyl groups in the 1 and 3 (or meta-) positions, so the name is 1,3-diethylbenzene or m-diethylbenzene.

b. The

\[
\begin{align*}
\text{CH}_3 \\
\text{O} \\
\text{H}
\end{align*}
\]

group is called toluene. The bromine is in the 4 (or para-) position. The name is 4-bromotoluene or p-bromotoluene.

c. In this case, we name the compound as a butyne with a phenyl substituent. The name is 3-phenyl-1-butyne.

d. We name this compound as a substituted toluene (with the $\text{CH}_3$ group assumed to be on carbon number 1). So the name is 2,4,6-trinitrotoluene. This compound is more commonly known as TNT, a component of high explosives.

☑ Self-Check Exercise 19.5

Name the following compounds.

a. \( \text{NO}_2 \)

b. \( \text{CH}_3\text{CH}_2\text{CH} \rightleftharpoons \text{CH} \equiv \text{CH}_3 \)

See Problems 19.55 and 19.56.