A carboxylic acid derivative is an organic compound that, upon reacting with water under appropriate conditions, affords a carboxylic acid as the only product or one of the products.

\[
\text{carboxylic acid derivative} \xrightarrow{\text{H}_2\text{O}} \text{carboxylic acid}
\]

Most carboxylic acid derivatives are carbonyl compounds with the following general structural formula.

\[
\begin{align*}
\text{O} \\
\text{R} & \quad \text{C} \\
& \quad \text{G}
\end{align*}
\]

\[\text{R} = \text{H, alkyl group, aryl group}\]

\[\text{G} = \text{a ligand bonded to the carbonyl carbon by a heteroatom}\]

\[\text{eg:}\]

\[
\begin{align*}
\text{CH}_3 & \quad \text{C} \quad \text{Cl} \\
\text{CH}_3 & \quad \text{C} \quad \text{OCH}_3
\end{align*}
\]

\[
\begin{align*}
\text{CH}_3 & \quad \text{C} \quad \text{O} \quad \text{C} \quad \text{CH}_3 \\
\text{CH}_3 & \quad \text{C} \quad \text{NH}_2
\end{align*}
\]

\[
\begin{align*}
\text{CH}_3 & \quad \text{C} \quad \text{SCH}_3
\end{align*}
\]

Nitriles are the most common class of carboxylic acid derivatives that are not carbonyl compounds.

**Contributors**

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