Epimers are diastereomers that contain more than one chiral center but differ from each other in the absolute configuration at only one chiral center.

\[ \text{eg:} \]

\[
\begin{align*}
\text{1} & : \text{CHO} \\
& \quad \text{OH} \\
& \quad \text{H} \\
& \quad \text{H} \\
& \quad \text{H} \\
& \quad \text{CH}_2\text{OH}
\end{align*}
\]

\[
\begin{align*}
\text{2} & : \text{CHO} \\
& \quad \text{HO} \\
& \quad \text{H} \\
& \quad \text{H} \\
& \quad \text{H} \\
& \quad \text{CH}_2\text{OH}
\end{align*}
\]

1 and 2 have the same molecular formula and the same structural formula and, therefore, stereoisomers. 1 and 2 are not mirror images of each other and, therefore, are diastereomers.

\[
\begin{align*}
\text{1} & : \text{C}_2\text{H}_5\text{O}_5 \\
& \quad \text{HOCH}_2\text{CHCHCHCHO} \\
& \quad \text{HOOH} \\
& \quad \text{HOCH}_2\text{CHCHCHCHO} \\
& \quad \text{HOOH}
\end{align*}
\]

\[
\begin{align*}
\text{2} & : \text{C}_2\text{H}_5\text{O}_5 \\
& \quad \text{HOCH}_2\text{CHCHCHCHO} \\
& \quad \text{HOOH} \\
& \quad \text{HOCH}_2\text{CHCHCHCHO} \\
& \quad \text{HOOH}
\end{align*}
\]

Diastereomers 1 and 2 differ from each other in the absolute configuration at only one chiral center. Thus, 1 and 2 are epimers.

In epimers the chiral carbon atoms whose absolute configuration makes the two compounds different are called the epimeric carbons.
Contributors

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