An active methylene compound is a compound that has the following general structural formula.

\[
\begin{array}{c}
\text{H} \\
\text{E}^1 \\
\text{H} \\
\text{E}^2
\end{array}
\]

\( \text{E}^1, \text{E}^2 = \text{a functional group that withdraws electrons by resonance} \)

eg:

\[
\begin{array}{c}
\text{H} & \text{O} & \text{O} \\
\text{H} & \text{H} & \text{E}^1
\end{array}
\]

\[
\begin{array}{c}
\text{H} & \text{O} & \text{O} & \text{E}^1 \\
\text{H} & \text{E}^2
\end{array}
\]

\[
\begin{array}{c}
\text{H} & \text{O} & \text{O} \\
\text{H}
\end{array}
\]

\[
\begin{array}{c}
\text{H} & \text{O} & \text{O} \\
\text{H} & \text{E}^2
\end{array}
\]

\[
\begin{array}{c}
\text{H} & \text{O} \\
\text{H} & \text{E}^2
\end{array}
\]

The conjugate base of an active methylene compound is highly resonance stabilized.

eg:
Consequently, active methylene compounds are highly acidic and can be deprotonated, for all practical purposes, irreversibly, using common strong bases, such as the hydroxide ion or alkoxide ions.

Notice that the equilibrium constant, $K$, is very large.

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Contributors
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