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

E₁, E₂ = a functional group that withdraws electrons by resonance

eg:

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.

\[
\begin{align*}
\text{compound} & \quad \text{pK}_a \\
1 & \quad 9 \\
\text{water} & \quad 16
\end{align*}
\]

equilibrium constant, \( K = \frac{10^{-9}}{10^{-16}} \)
\[
= \frac{10^7}{10^1} = 10^6
\]

Notice that the equilibrium constant, \( K \), is very large.

Contributors
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