The haloform reaction is the reaction of a methyl ketone with chlorine, bromine, or iodine in the presence of hydroxide ions to give a carboxylate ion and a haloform. There is one aldehyde that undergoes the haloform reaction, which is acetaldehyde.

eg:

\[
\begin{align*}
\text{Ph} & \quad \text{O} \quad \text{CH}_3 \quad \xrightarrow{\text{Br}_2} \quad \text{Ph} \quad \text{O} \quad \text{Na}^+ \quad + \quad \text{CHBr}_3
\end{align*}
\]

**mechanism:**

When the halogen used is iodine, the haloform reaction can be used to identify methyl ketones because iodoform is a yellow solid with a characteristic odor. The test is known as the iodoform test. Alcohols that have the general structural formula 1 also give a positive iodoform test because, under the reaction conditions, they are oxidized (see oxidation) to the corresponding methyl ketone, or, in the case of ethanol to acetaldehyde, which is the only aldehyde that undergoes haloform reaction.
Contributors

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