

The halogenoalkane 2-bromo-3-methylbutane reacts with hot ethanolic potassium hydroxide to form a mixture of two alkenes and an alcohol.

For the formation of each product, write a balanced equation, state the role of the hydroxide ions, name and draw the mechanism.

Alcohol	balanced equation	$\begin{array}{cccc} CH_3 & CH_3 \\ CH_3 - CH - CH - CH_3 + KOH & \longrightarrow & CH_3 - CH - CH_3 + KBr \\ Br & & OH \end{array}$
	role of hydroxide ion	nucleophile
	mechanism name	nucleophilic substitution
	mechanism	$CH_3 - CH - CH - CH_3$ Br

	balanced equation	$\begin{array}{c} CH_{3} \\ CH_{3}-CH-CH-CH_{3} + KOH \longrightarrow CH_{3}-C \longrightarrow CH_{3} + KBr + H_{2}O \\ \\ Br \end{array}$
	role of hydroxide ion	base
Alkene 1	mechanism name	elimination
	mechanism	$CH_3 - CH_3$ $CH_3 - CH_4$ H_0 :

Alkene 2	balanced equation	$CH_{3} \xrightarrow{CH_{3}} CH_{3} \xrightarrow{CH_{3}} H$ $CH_{3} \xrightarrow{CH_{3}} CH \xrightarrow{CH_{3}} H$ $CH_{3} \xrightarrow{CH_{3}} CH \xrightarrow{CH_{2}} H$ $CH_{2} \xrightarrow{CH_{3}} H$ $CH_{2} \xrightarrow{CH_{3}} H$ $H_{2}O$ $H_{3} \xrightarrow{CH_{3}} H$
	role of hydroxide ion	base
	mechanism name	elimination
	mechanism	$CH_{3} - CH - CH - CH_{2}$ $H_{3} - CH - CH_{2}$