Alkenes do not undergo hydration upon treatment with water even at very high temperatures. There are two approaches to hydrating alkenes:

1. Reaction of the alkene with water in the presence of a strong-acid catalyst.
2. Using an indirect method, such as oxymercuration-reduction, also known as oxymercuration-demercuration or, simply, oxymercuration.

\[
\text{alkene} \xrightarrow{\text{oxymercuration-reduction}} \text{alcohol}
\]

net reaction:

\[
\text{alkene} \xrightarrow{\text{H}_2\text{O}} \text{alcohol}
\]

The protocol is carried out in two stages:

**Stage 1:** Oxymercuration: The alkene is treated with aqueous mercury (II) acetate, \(\text{Hg(OAc)}_2\), which converts the alkene into an organomercury compound (see organometallic compound).

**Stage 2:** Reduction (Demercuration): The organomercury compound is treated with a reducing agent, usually \(\text{NaBH}_4\), which converts the organomercury compound into an alcohol.

eg: Stage 1:

The reaction is an anti addition.

Stage 2:

Stage 1 + Stage 2 =

The net reaction is a Markovnikov addition:
Contributors

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