

Similar Reactions of Alkenes and Alkynes

<u>Reaction or Reagent</u>	<u>Alkenes</u>	<u>Product</u>	<u>Alkynes</u>
HX, anhydrous (Markovnikov)	alkyl halides		Vinyl halides or 1,1-dihaloalkanes (gem-dihalide)
X ₂ , anhydrous	1,2-dihaloalkanes (vic-dihalide)		1,2-trans-dihaloalkenes or 1,1,2,2-tetrahaloalkane
Hydration: H ₃ O ⁺ (Markovnikov)	alcohols		-----
oxymercuration (Markovnikov)	alcohols		terminal: methyl ketones internal: ketones (mixture)
hydroboration (anti-Markovnikov)	alcohols		terminal: aldehydes internal: ketones (mixture)
Hydrogenation: H ₂ , Pd/C or PtO ₂	alkanes		alkanes
H ₂ , Lindlar Catalyst	-----		terminal: alkenes internal: cis-alkenes
Li in liq. NH ₃	-----		terminal: alkenes internal: trans-alkenes
Oxidative Cleavage: ozonolysis KMnO ₄	aldehydes or ketones		carboxylic acids carboxylic acids