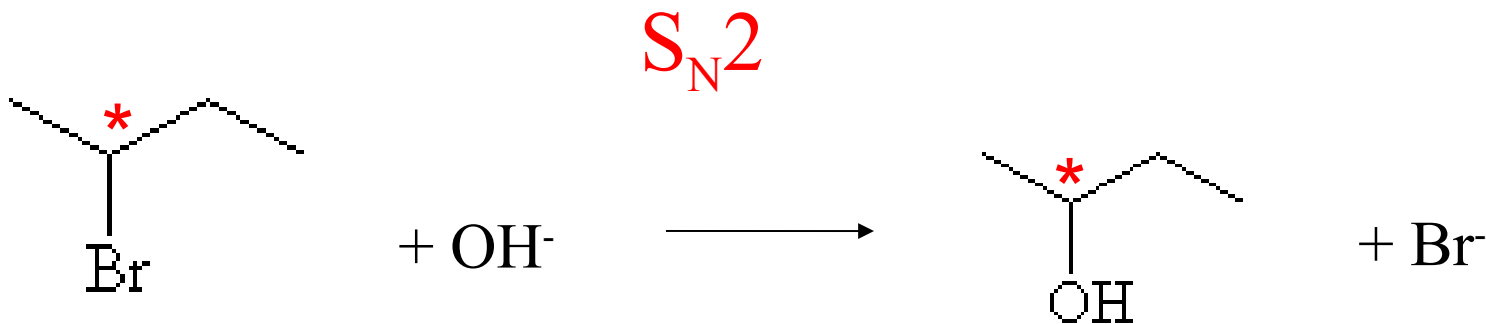


# Nucleophilic Substitution



reaction is 1<sup>st</sup> order in  $\text{C}_4\text{H}_9\text{Br}$

1<sup>st</sup> order in  $\text{OH}^-$

$$\text{rate} = k [\text{R} - \text{X}][\text{OH}^-]$$

reactants are optically active

products are optically **active**