

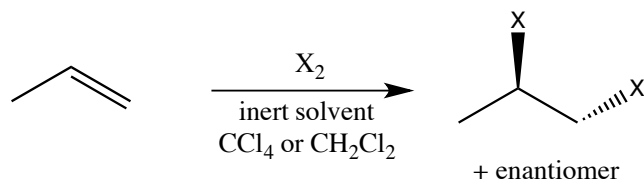
## Chem 343 – Organic Reactions

### Chapter 5 & 7

Prepared by José Laboy, MS

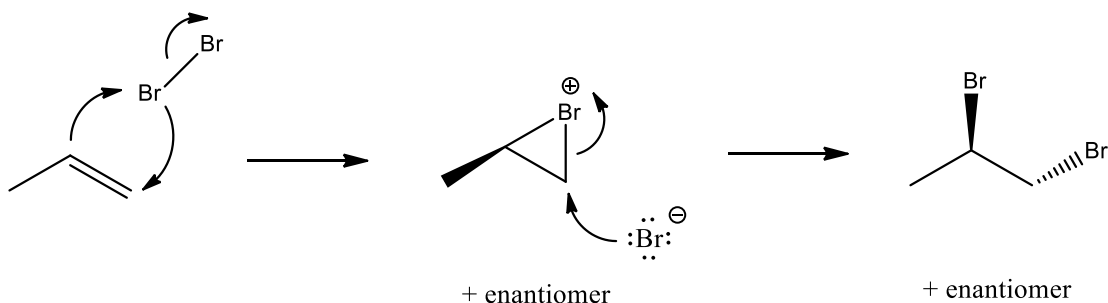
<http://www.chem.wisc.edu/areas/clc> (Resource page)

### Alkene Reactions #3: Halogenation of Alkenes



X = Cl, Br

Mechanism



The reaction goes through a cyclic intermediate, e.g., bromonium and chloronium. The halogen anion thus formed in the first step of the reaction attacks the cyclic intermediate on the carbon atom of the three-membered ring that is less substituted. The product formed is the result of an anti-attack of the halide to the cyclic halonium.

A reaction that affords different stereoisomeric products from stereoisomeric starting materials under the same conditions is said to be **stereospecific**. The addition of X<sub>2</sub> is stereospecific (see example below). The product is the result of an anti addition of X<sub>2</sub> across the double bond. When iodine is used, I<sub>2</sub>, the resulting vicinal diiodide, e.g., 1,2-diiodides, compounds are quite unstable and revert to the alkene at room temperature.

