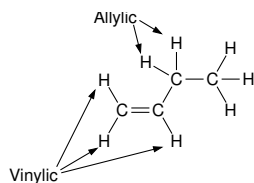


CHEM 20481 - Basic Organic Chemistry - Chapter 10 Review

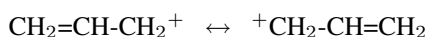
Conjugated Dienes and Allylic Compounds

Definitions



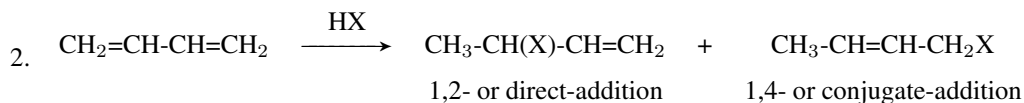
Bond Strength: Vinyllic > 'normal' > Allylic

Allylic Carbocations and Allylic radicals are resonance stabilized.



Allene	Conjugated Diene	Isolated Diene
$\text{H}_2\text{C}=\text{C}=\text{CH}_2$	$\text{CH}_2=\text{CH}-\text{CH}=\text{CH}-\text{CH}_3$	$\text{CH}_2=\text{CH}-\text{CH}_2-\text{CH}=\text{CH}_2$

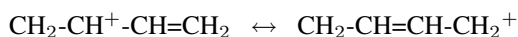
Reactions



Kinetic product: derived from most stable intermediate. Favored at low temperatures.

Thermodynamic product: derived from most stable product. Favored at high temperatures.

Understanding the mechanisms of these reactions is necessary not only to predict the structure of the products, but also to determine which is the kinetic product. For the above reaction, the carbocation intermediate is:



The first form is a secondary carbocation, and is more stable than the primary carbocation. Thus, the direct (1,2-) addition product is the kinetic product.

