

A blue spiral-bound notebook with silver rings at the top. The cover has a fine, woven texture. The title "Elimination Fundamentals" is printed in a large, white, sans-serif font with a subtle drop shadow.

Elimination Fundamentals

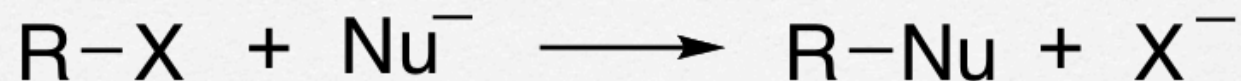
UCI Chem 51A
Dr. Link

Goals

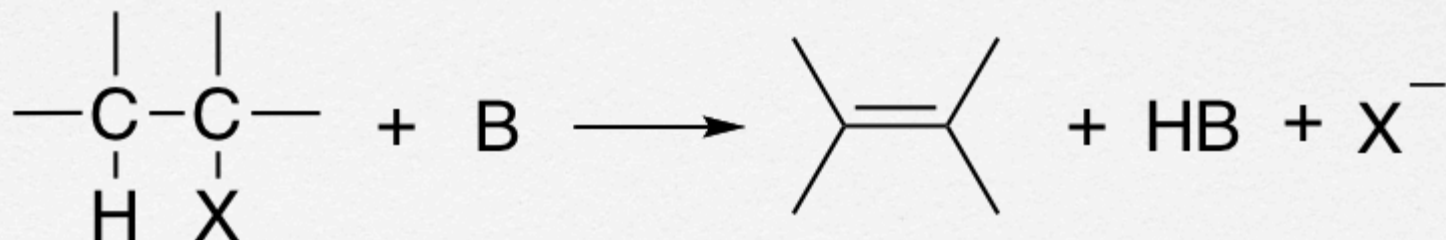
- After this lesson you should be able to
 - Identify and classify alkenes
 - Rank relative stability of alkenes
 - Describe the general method by which alkenes can be made from alkyl halides

Alkyl Halide Reactions

Substitution

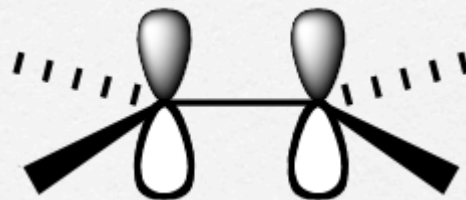


Elimination

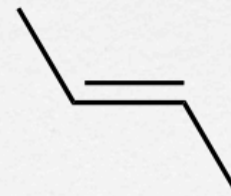
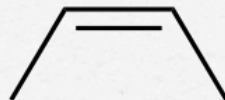
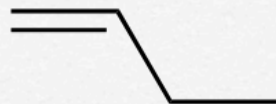


Alkenes 101

- Alkenes = C-C double bond
- No rotation!

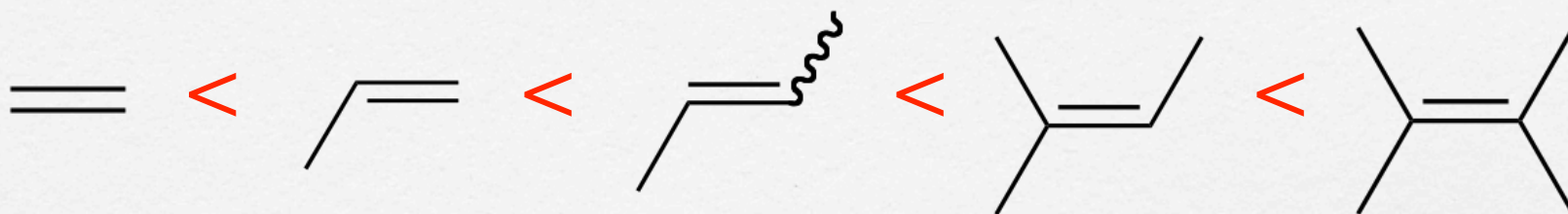


Alkene Isomers



Alkene Stability

1. More substituted = more stable.



2. Sterics!

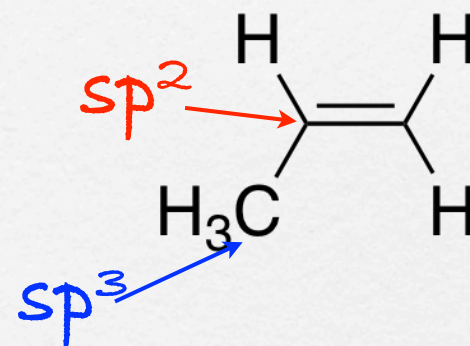


Why Are More Substituted Alkenes More Stable?

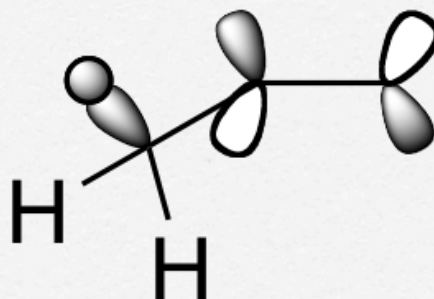
Electronegativity: sp^2 vs sp^3

sp^2 more electronegative than sp^3

sp^3 donate to sp^2



Hyperconjugation

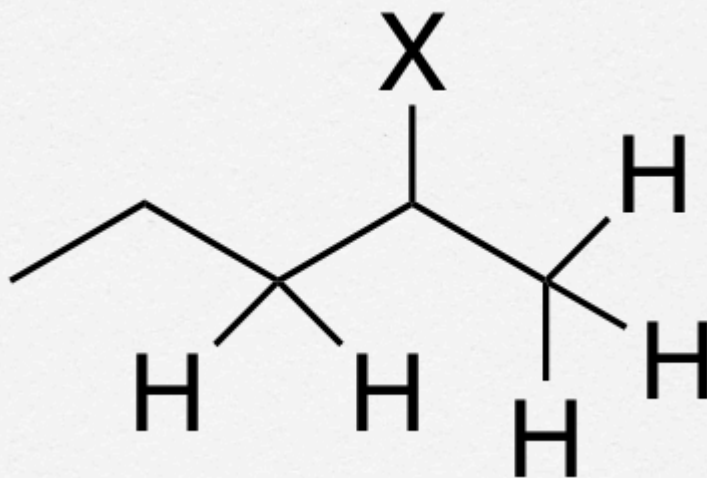


Elimination Components & Factors

- Alkyl Halide (or other molecule with LG)
- Leaving Group (same as substitution)
- Base
- Solvent (same as substitution)

Making Alkenes: β -Hydrogens

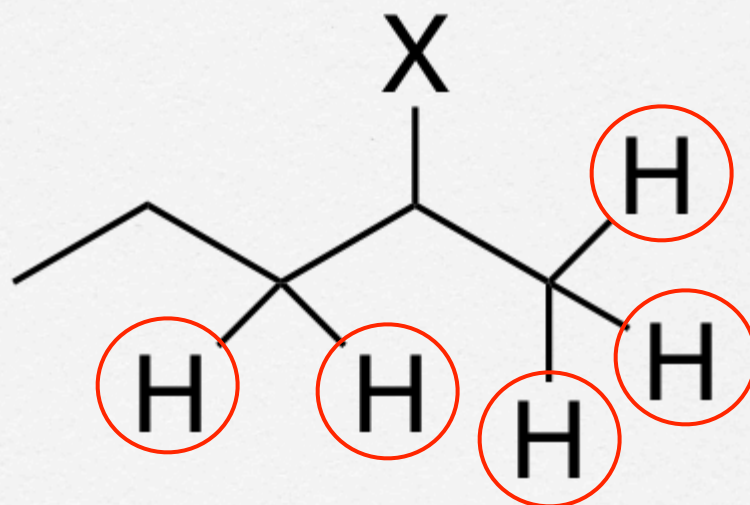
□ β -H ABSOLUTELY REQUIRED!



note: α C can sometimes be sp^2

The Base

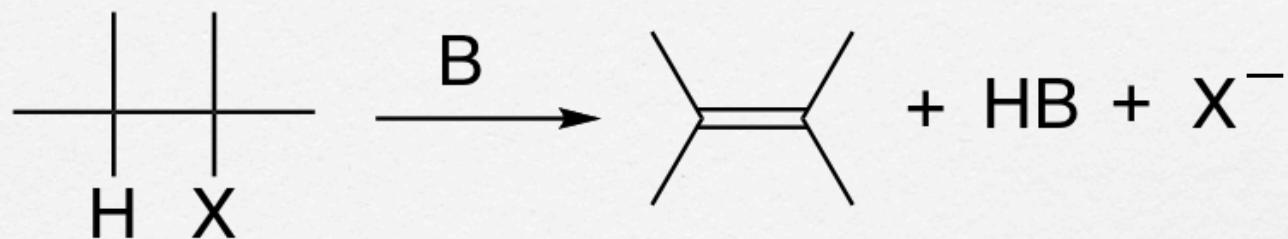
□ Base is required for eliminations!



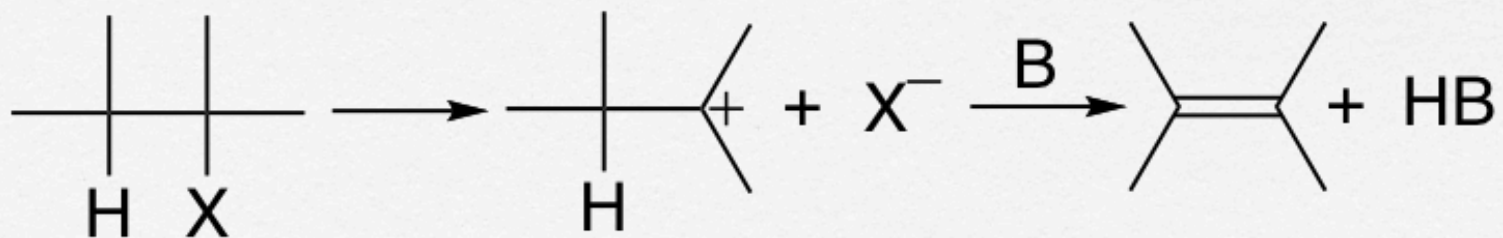
B⁻

Making Alkenes: 2 Possible Pathways

All at Once



One Step at A Time



Wrapping Up

- Practice identifying types of alkenes
- Practice ranking relative alkene stabilities
- Practice identifying β -hydrogens