

E1 vs E2

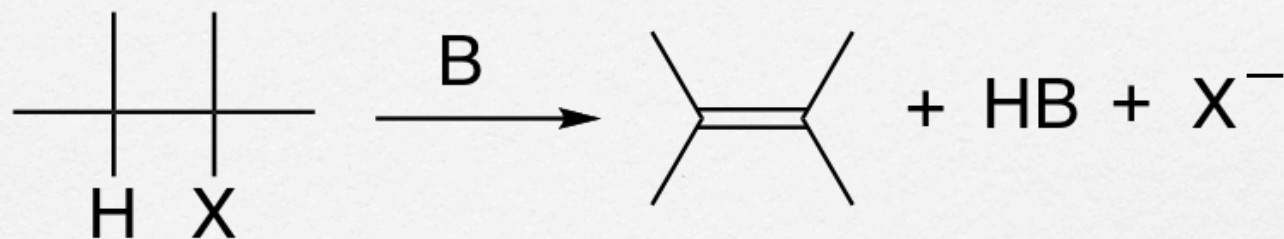
UCI Chem 51A
Dr. Link

Goals

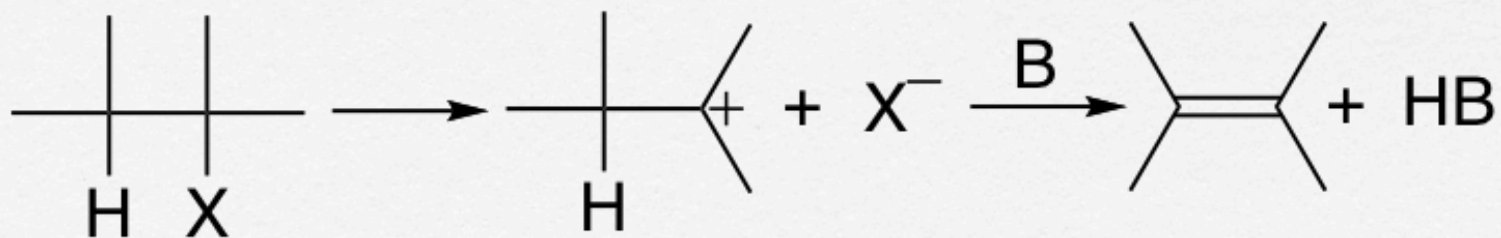
- After this lesson you should be able to
 - Identify reaction conditions that favor either the E1 or E2 mechanism
 - Determine whether the E1 or E2 mechanism will be dominant for an alkyl halide under a given set of conditions

Making Alkenes: 2 Possible Pathways

All at Once: E2



One Step at A Time: E1



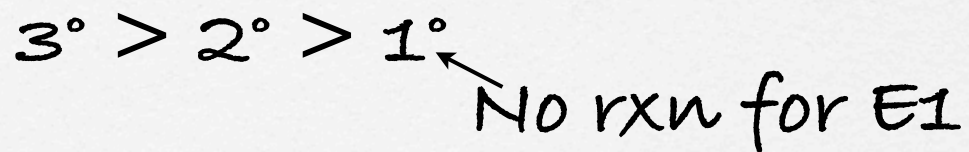
Which Mechanism Is It?

- E2 usually faster than E1 because forming carbocation intermediate is slow
- To favor E1, slow down E2

The Alkyl Halide

- Both have the same order of reactivity!

Reactivity Order



How do we decide?

The Base: Most Important Factor

□ Strong bases: E2

□ Weak bases: E1

A spiral-bound notebook with a dark blue cover is shown from a top-down perspective. The notebook is open to a blank white page. The word "Examples" is written in a large, bold, black sans-serif font in the upper left quadrant of the page. The spiral binding is visible along the top edge of the page.

Examples

Wrapping Up

- Practice identifying conditions that favor E1 or E2 mechanisms
- Practice determining which mechanism will dominate based on a set of conditions
- Practice predicting the outcome of elimination reactions