HOMES STUDENTS: email Prof. Stahl by Wed.

HOMEWORK: Ch. 11 - 25-29, 36, 42-47
Ch. 12 - 1-8, 11-16
* Due Monday April 23rd do every other problem

* Alcohol Protecting Groups

1. $R-O^+ + H^+ \rightarrow ROH + H_2O$ add acid to regenerate alcohol

2. $RO^- + NaOMe \rightarrow RO^- + R3SiF$

   $\downarrow$

   $ROH + R3SiCl$

   $\uparrow$ (base)

   $ROH$

Very stable bond between $Si$ and $F$ driving force for the reaction

Ethers are not very reactive

$R-O-R + HBr \rightarrow R-Br + H_2O-R$

Very harsh conditions to form bromide
Special type of ethers that is reactive...

*Epoxides*

\[ \text{ring strain makes epoxides very reactive} \]

\[ R\underset{\text{trans}}{\underset{\text{cis}}{\text{+}}} \overset{\text{H}}{\text{O-O-H}} \rightarrow \overset{\text{R}}{\text{cis}}_{\text{oil}} \overset{\text{H}}{\text{O-O-H}} \]

*Typical Reagents used in this reaction:*

1. MCPBA (meta-chloro perbenzoic acid)
2. \( \text{Mg}^2+ \text{ mono-peroxy phthulate} \)

*Reactions of Epoxides*

Ring Opening Reactions $\rightarrow$ basic (anionic) conditions

$\rightarrow$ acidic conditions
(A) Basic Conditions

SN2 - attack occurs at less substituted center

Propylene oxide

(B) Acidic Conditions

This reaction looks like bromonium ion...

When does it attack on?

Why? 3° carbocation is more stable
acidic conditions

- anti addition (S_{N2})
- substitution takes places at most hindered center

* crown ethers *

helps dissolve inorganic reagents like K^{+}CN^{-} in organic solvents like benzene

18-crown-6

(# of atoms) (# of oxygens)