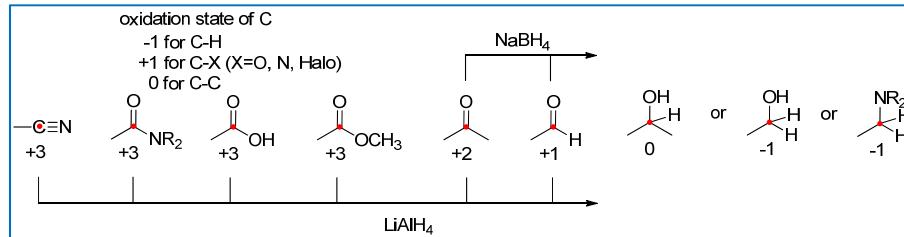


Chemistry of Carboxylic Acids and Derivatives

April 17, 2013

- Esterification using electrophiles.
- General reactivity issues for addition-elimination rxns.
- Preparation of acid chlorides & anhydrides.
- Reduction of acids, esters, and acid chlorides.

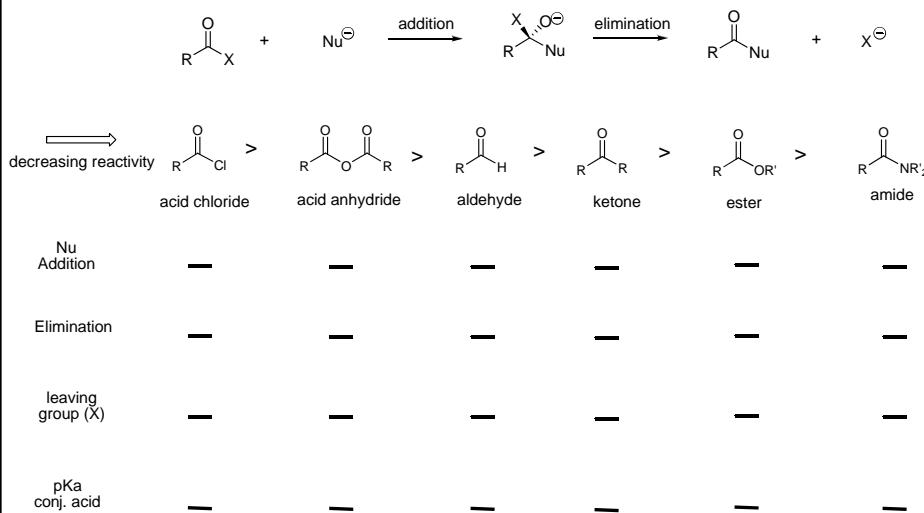


Announcements

Suggested Problems for Chapter 20: 20.25, 20.27, 20.30, 20.32, 20.35, 20.38, 20.40, 20.43, 20.45, 20.46, 20.49, 20.51, 20.53, 20.55.
Chapter 21: 21.31, 21.34, 21.35, 21.39, 21.43, 21.44, 21.46, 21.48, 21.51, 21.53, 21.54 (b,d), 21.55 (f,g,h,i), 21.56 (b,c,e), 21.60.

TA Office Hours: Mon 7-8 pm: Rob Craig - 302 Schlinger (x4056); Tue 3-4 pm: Kelly Kim - 302 Schlinger (x4047); Tue 7-8 pm: Corey Reeves - 302 Schlinger (x4056); Wed 5-6 pm: Adam Boynton - 139 Noyes (x3202); Wed 8-9 pm: Ben Suslick (UTA) - Lloyd Lounge; Thu 8-9 pm: Evan Zhao (UTA) - Fleming Lounge ; Thu 9-10 pm: Crystal Chu - 202 Schlinger (x3634); Sun 3-4 pm: Chung Wan Lee - 302 Schlinger (x4056)

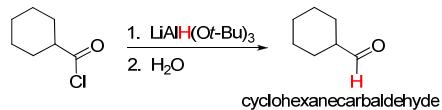
*Reactivity Order of Carbonyl Groups: General *Addition-Elimination Mechanism*



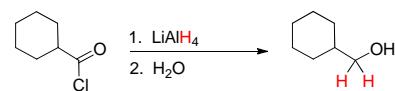
*Effect of acid activation and/or proton transfers not shown.

Reduction of Acid Chlorides with LiAlH_4 and $\text{LiAlH}(\text{O}t\text{-Bu})_3$

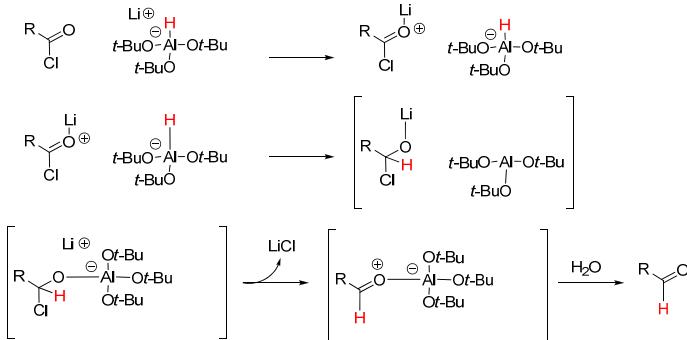
Lithium tri-*tert*-butoxyaluminum hydride reduction:



Lithium aluminum hydride gives the alcohol:

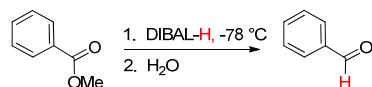


Mechanism:

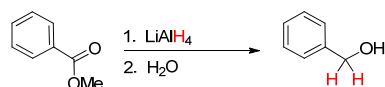


Reduction of Esters with LiAlH_4 and DIBAL-H

Diisobutylaluminum hydride (DIBAL-H) gives the aldehyde:



Lithium aluminum hydride gives the alcohol:



DIBAL Mechanism:

