

Course 343Instructor HackenbergerDay MondayDate 11/18/13Notes Taken By GunnetteTotal # of Pages 6

Submit notes to the Undergraduate Chemistry Office for posting.
PLEASE COMPLETE NOTES IN INK AND DO NOT STAPLE.

Last Lecture: - Nucleophilic Sub. of alcohols

~~acidic~~ - acidic conditions

- transformation of -OH into a good L.G.
 ("pseudo halides")

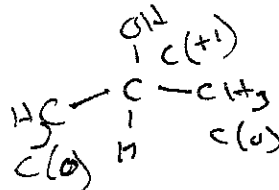
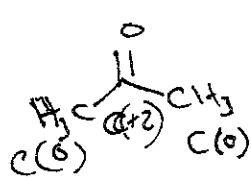
- oxidation / reduction

Easy method to assign ox. state to C

- increment ox +1 for C-X (X = electroneg. atom)

- NO increment for C-H or C-C

~ example

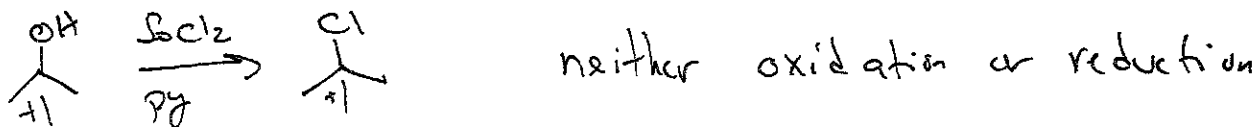


Need to be able to group + categorize compounds
 based on their oxidation state

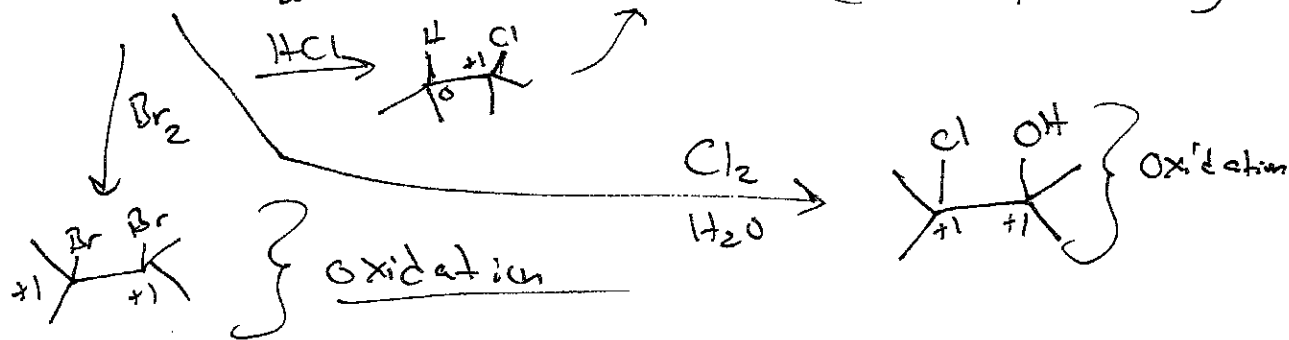
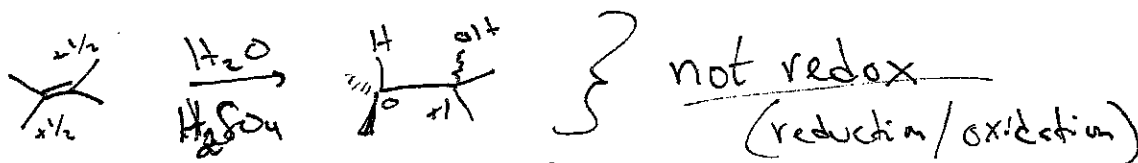
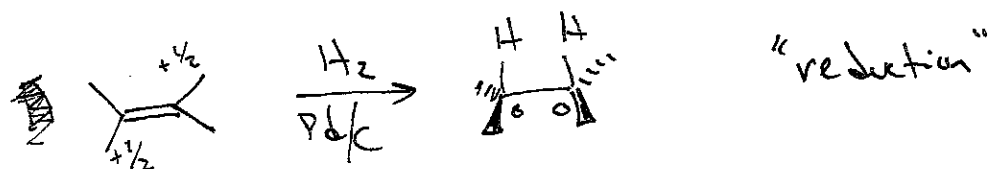
Use this to categorize chemical reactions:



Submit notes to the Undergraduate Chemistry Office for posting.
PLEASE COMPLETE NOTES IN INK AND DO NOT STAPLE.



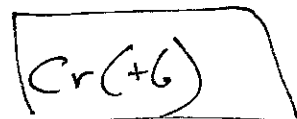
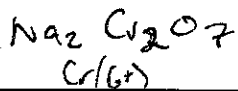
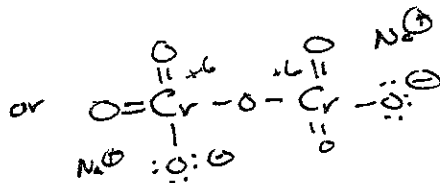
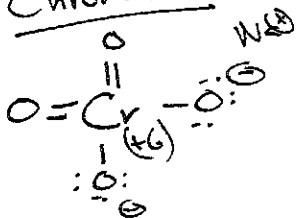
Be careful w/ C=C! \rightarrow each C is $+1/2$ oxidation state



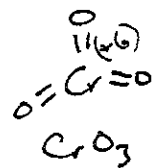
Oxidation of alcohols

Oxidation agents based on

Chromate

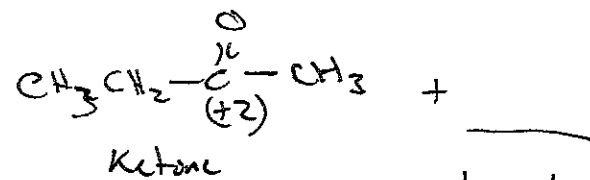
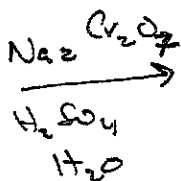
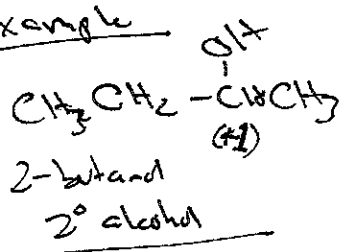


\rightarrow reduced in rxn to Cr(+3)

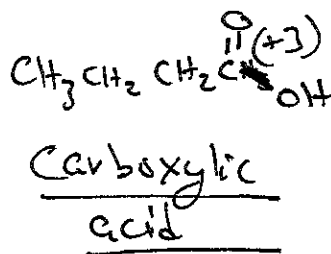
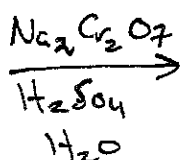
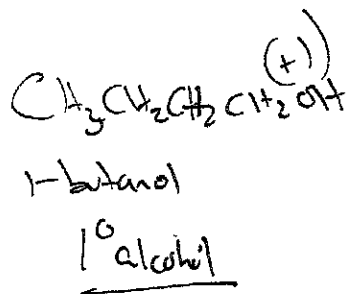


Submit notes to the Undergraduate Chemistry Office for posting.
PLEASE COMPLETE NOTES IN INK AND DO NOT STAPLE.

Example

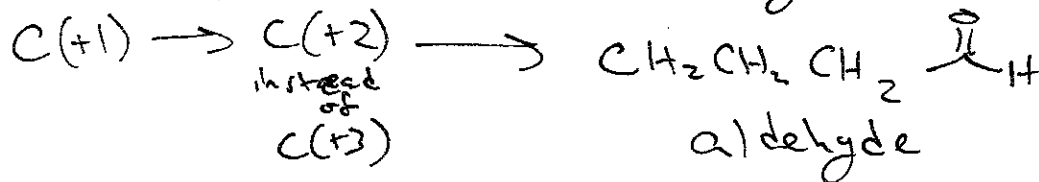


do not
need to
know the
Cr products
(p. 460)



→ in H_2O we oxidize the carbon to highest ox state possible without destroying C-C bonds!

Can we stop after the first stage in 1° alcohol?

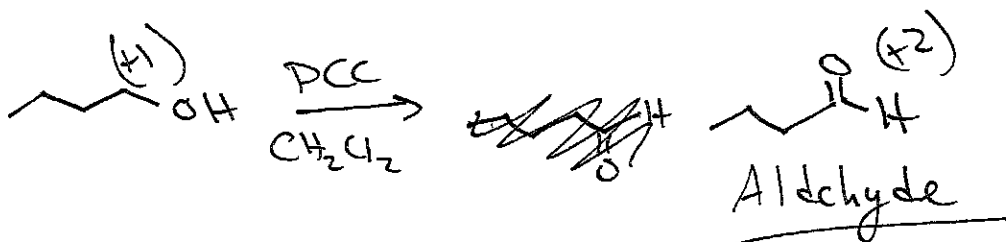
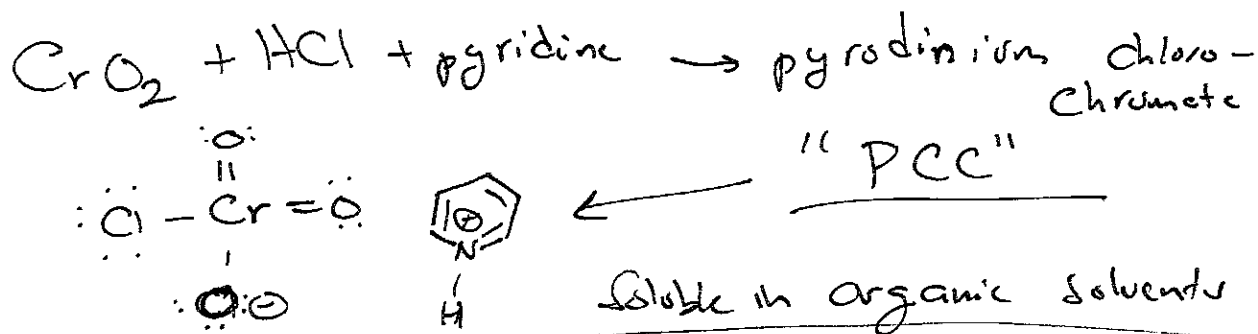


To stop 1° alcohol from being further oxidized to carboxylic acid, you have to work under anhydrous conditions (i.e. exclude H_2O from rxn)

→ we need a Cr⁺⁶ reagent that is soluble in organic solvents.

Course 343Instructor HackenbergerDay MondayDate 11/18/13Notes Taken By GreenleeTotal # of Pages 6

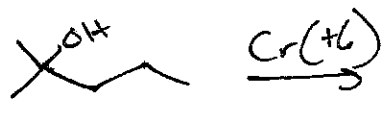
Submit notes to the Undergraduate Chemistry Office for posting.
PLEASE COMPLETE NOTES IN INK AND DO NOT STAPLE.



Note: No rxn occurs:

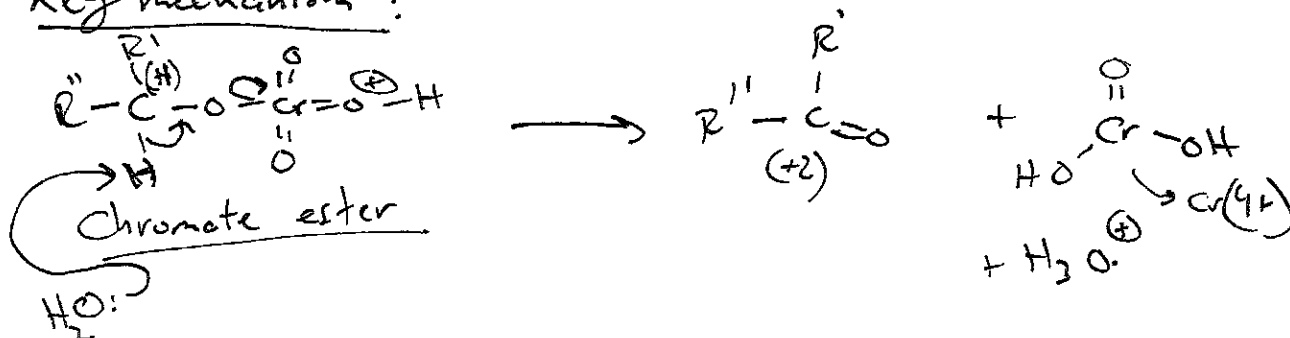


No rxn



No rxn (would need to break C-C)

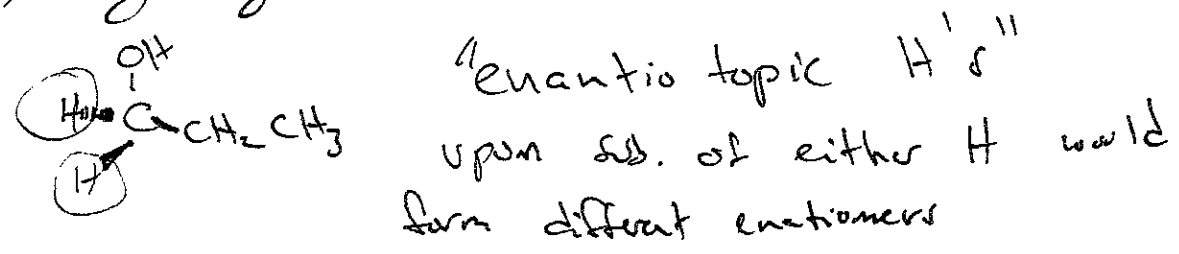
Key mechanism:



Submit notes to the Undergraduate Chemistry Office for posting.
PLEASE COMPLETE NOTES IN INK AND DO NOT STAPLE.

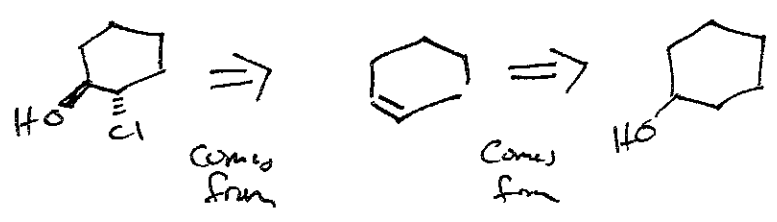
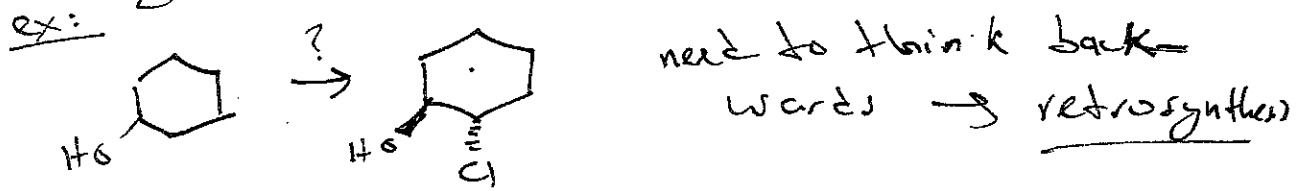
Two ~~aspects~~ important aspects in Ch 10
Section 10.8 → **READ**

→ Recognizing different sites in organic molecules

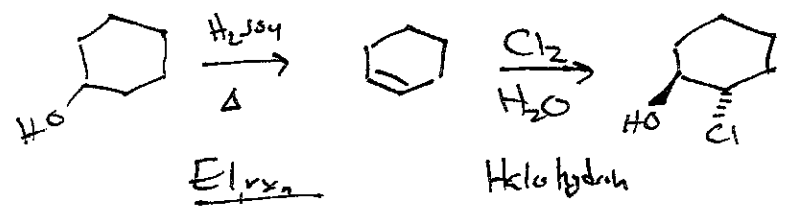


→ Section 10.11 → **READ**

Multi Reaction Schemes → transforming one organic molecule into another one via many steps



retrosynthesis
 Arrow
 ⇒



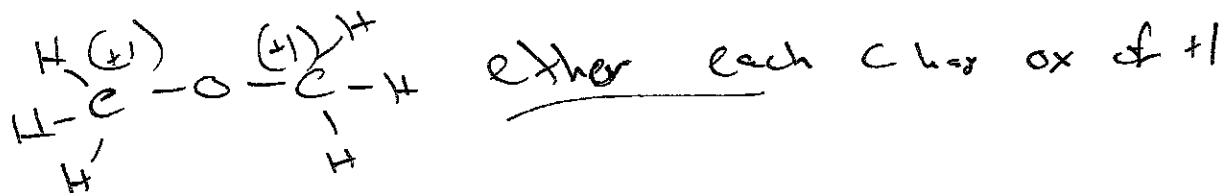
"think about a nice detour"

Course 343Instructor HackenbergerDay MondayDate 11/18/13Notes Taken By GuennetteTotal # of Pages 6

Submit notes to the Undergraduate Chemistry Office for posting.
PLEASE COMPLETE NOTES IN INK AND DO NOT STAPLE.

Chapter 11 (last chapter for Exam 3)

Ethers and related compounds



(-S-) \rightarrow thioether

Problems: 1-24, 30, 40-42, 44, 46-63, 68, 69-71, 75,
77-79

recall S_N2 rxn of $R-O^-$ w/ $R-LG$

Formally called "Williamson ether synthesis"