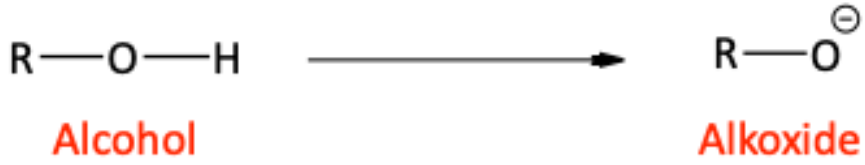
Alcohol Reaction Review: Name the Reagents

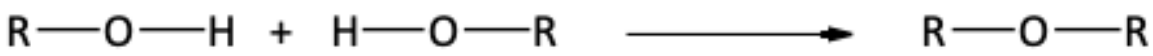
Each reaction shows the starting material and the product. Write the reagents above the arrow.

Name: _____ Date: _____

Alkoxide formation



Dehydration to form an ether

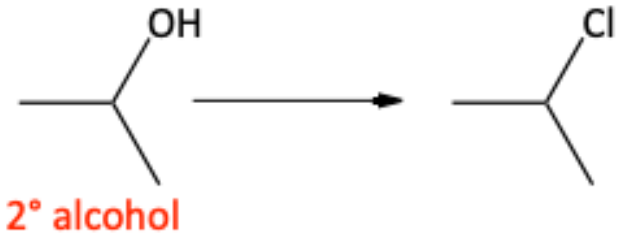


Dehydration to form an alkene



Alcohols to good leaving groups

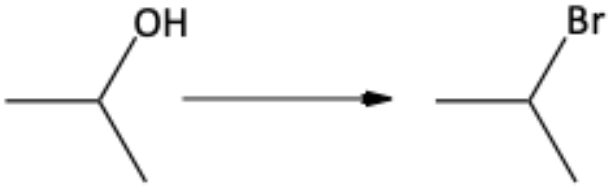








1° alcohol



2° alcohol



3° alcohol



1° alcohol



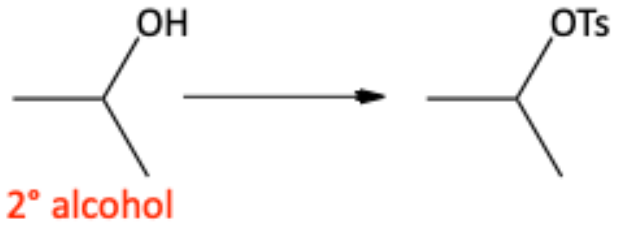
2° alcohol



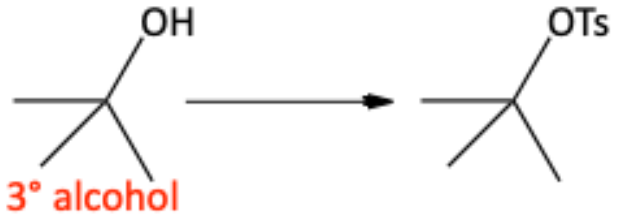
3° alcohol



1° alcohol



2° alcohol



3° alcohol



1° alcohol



2° alcohol



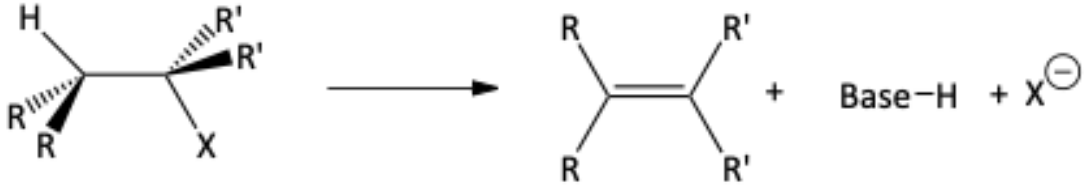
3° alcohol

Williamson Ether Synthesis

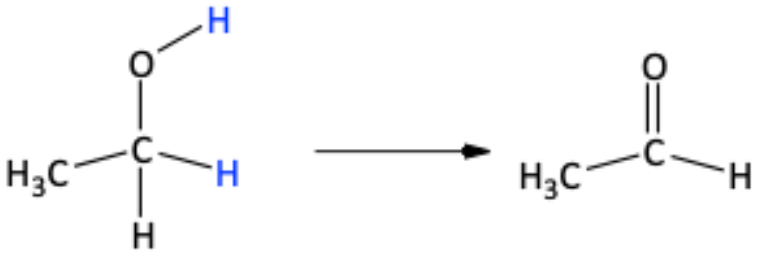


alkoxide ether

E2 Elimination



Oxidation of alcohols with weak oxidizer

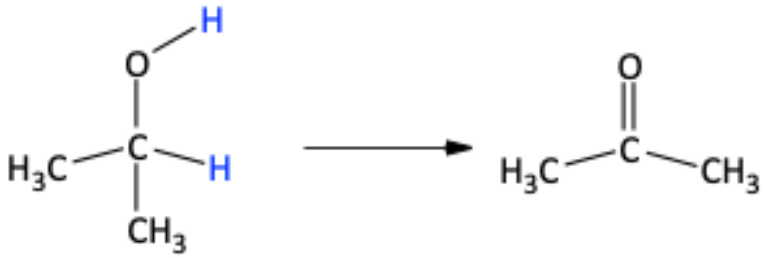


primary alcohol

1 C-O bond

aldehyde

2 C-O bonds

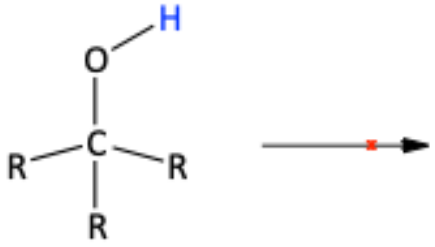


secondary alcohol

1 C-O bond

ketone

2 C-O bonds

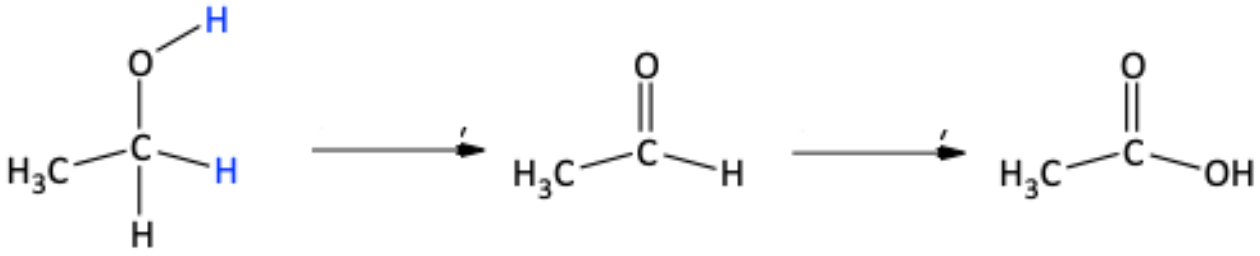


tertiary alcohol

1 C-O bond

Cannot lose two H atoms. Cannot oxidize.

Oxidation of alcohols with strong oxidizer



primary alcohol

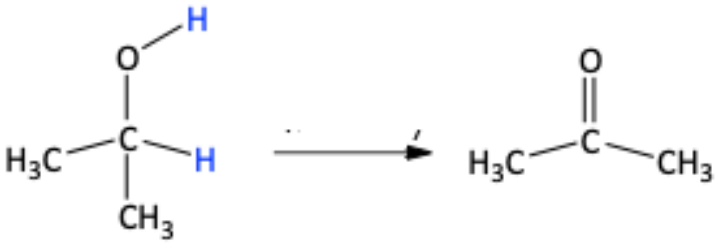
1 C-O bond

aldehyde

2 C-O bonds

carboxylic acid

3 C-O bonds

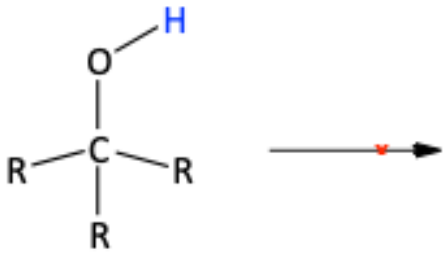


secondary alcohol

1 C-O bond

ketone

2 C-O bonds

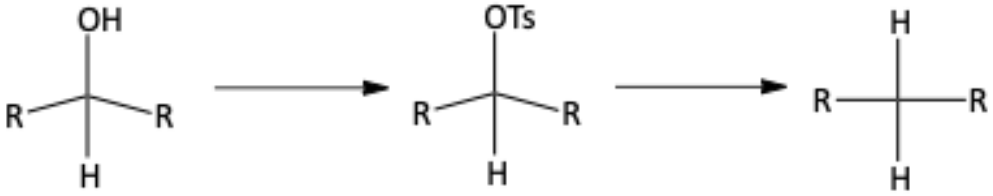


tertiary alcohol

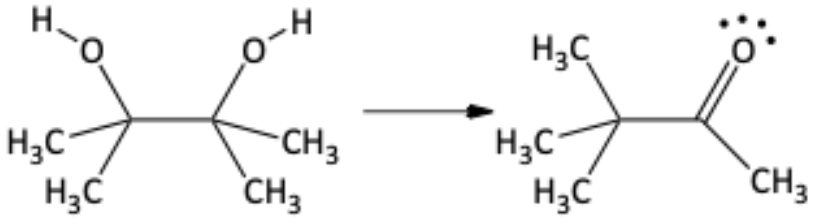
1 C-O bond

Cannot lose two H atoms. Cannot oxidize.

Reduction of Alcohols



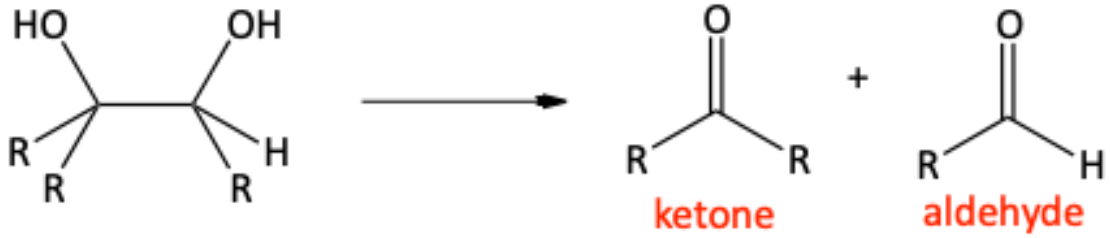
Pinacol Rearrangement



pinacol

pinacolone

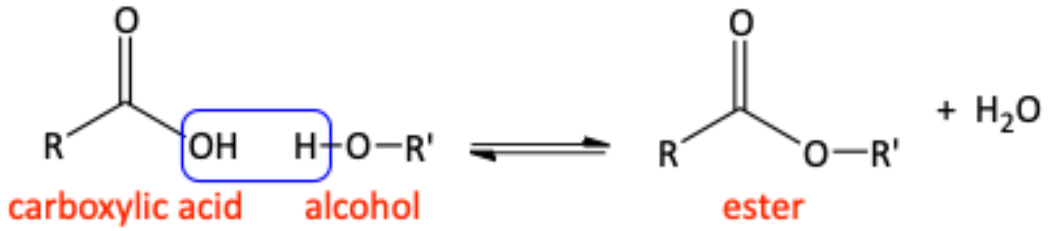
Periodic acid cleavage of diol



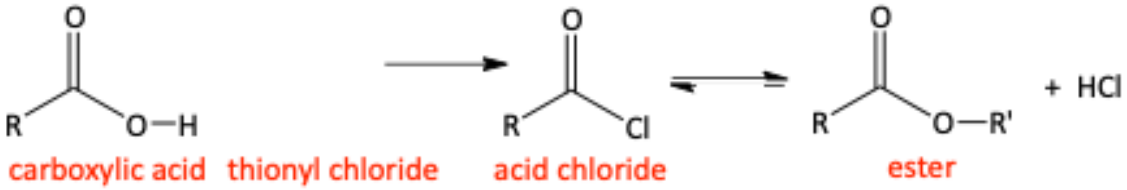
ketone

aldehyde

Fischer Esterification – carboxylic acid to ester



Carboxylic acid to acid chloride to ester



Thiol reactions

