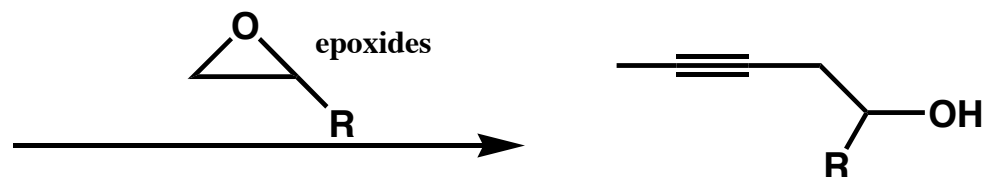
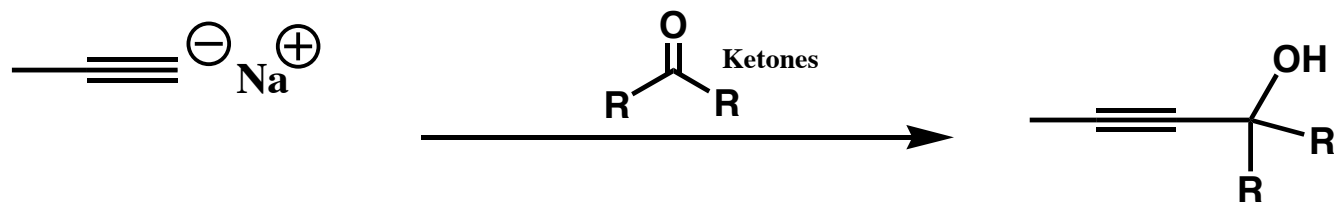
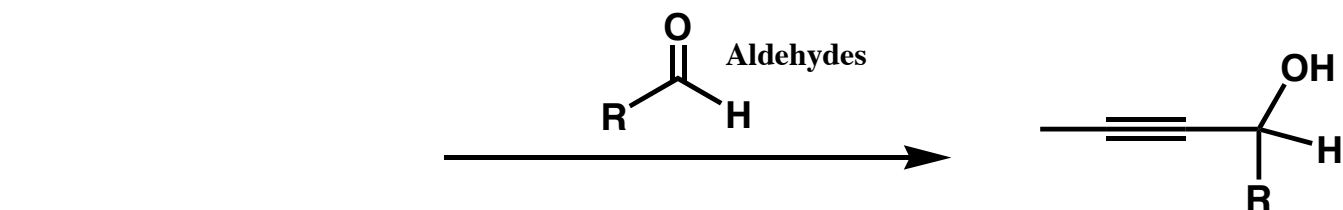
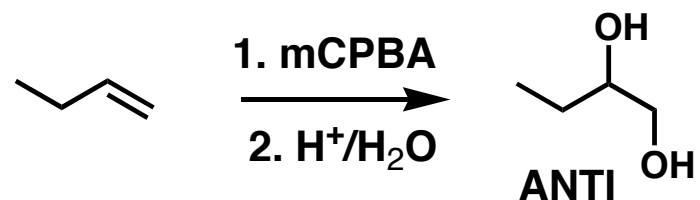
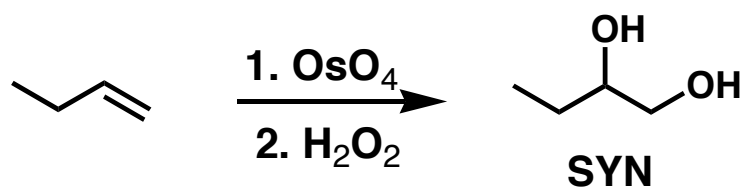
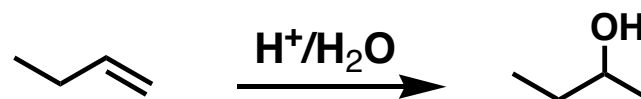
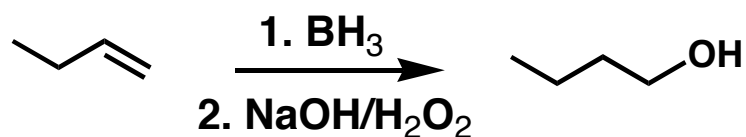
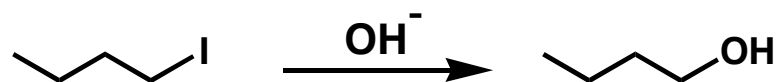


Table of K_a Values

Acid-Dissociation Constants of Representative Alcohols

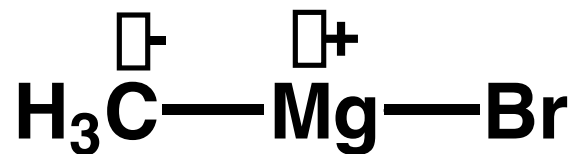
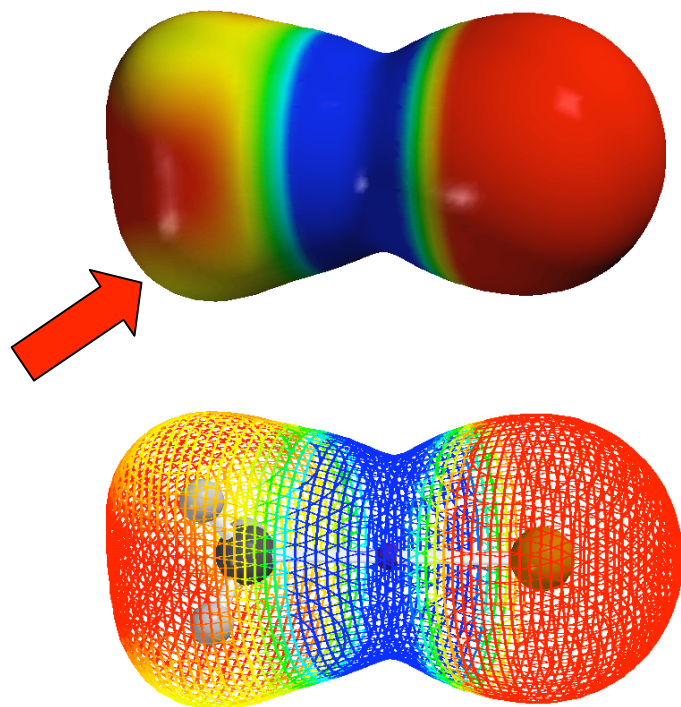
<i>Alcohol</i>	<i>Structure</i>	K_a	pK_a
methanol	$\text{CH}_3\text{—OH}$	3.2×10^{-16}	15.5
ethanol	$\text{CH}_3\text{CH}_2\text{—OH}$	1.3×10^{-16}	15.9
2-chloroethanol	$\text{Cl—CH}_2\text{—CH}_2\text{—OH}$	5.0×10^{-15}	14.3
2,2,2-trichloroethanol	$\text{Cl}_3\text{C—CH}_2\text{—OH}$	6.3×10^{-13}	12.2
isopropyl alcohol	$(\text{CH}_3)_2\text{CH—OH}$	3.2×10^{-17}	16.5
t-butyl alcohol	$(\text{CH}_3)_3\text{C—OH}$	1.0×10^{-18}	18.0
cyclohexanol	$\text{C}_6\text{H}_{11}\text{—OH}$	1.0×10^{-18}	18.0
phenol	$\text{C}_6\text{H}_5\text{—OH}$	1.0×10^{-10}	10.0
	<i>Comparison with other acids</i>		
water	H_2O	1.8×10^{-16}	15.7
acetic acid	CH_3COOH	1.6×10^{-5}	4.8
hydrochloric acid	HCl	1.6×10^{-2}	-2.2

METHODS FOR THE SYNTHESIS OF ALCOHOLS (to date)

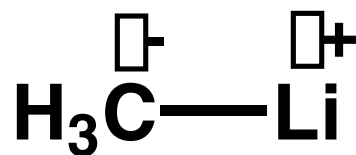
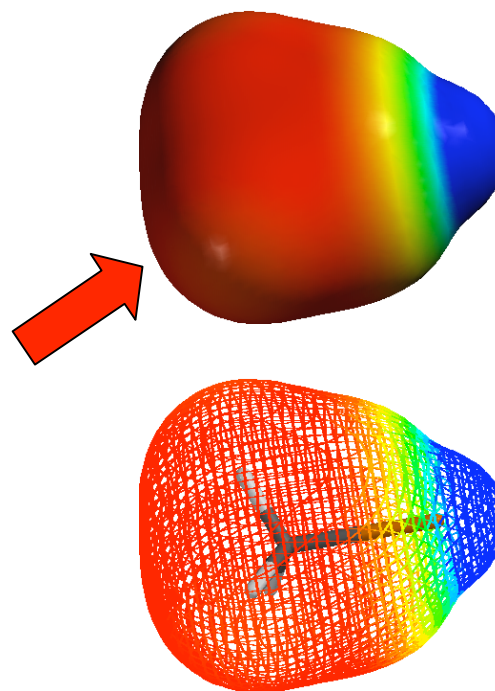


ELECTROPHILIC AND NUCLEOPHIC CARBON

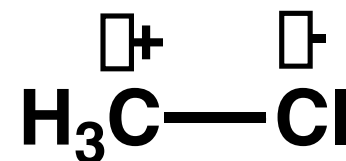
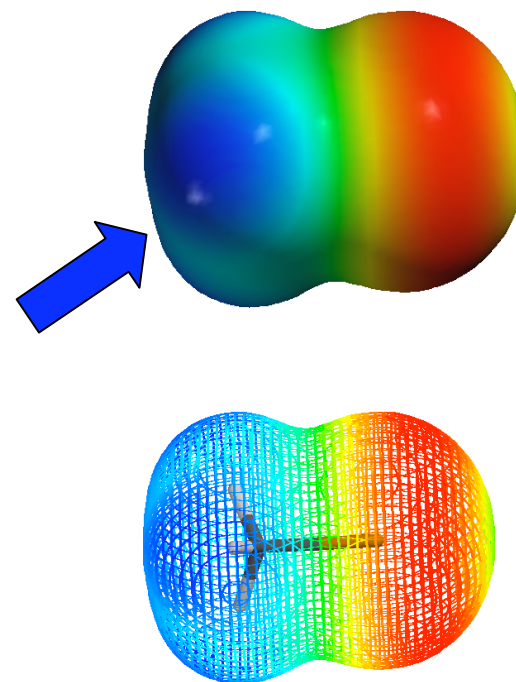
Methylmagnesium bromide



Methyl lithium

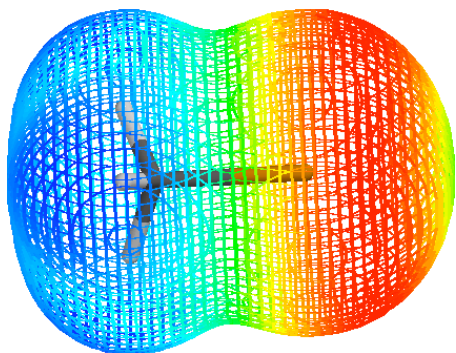
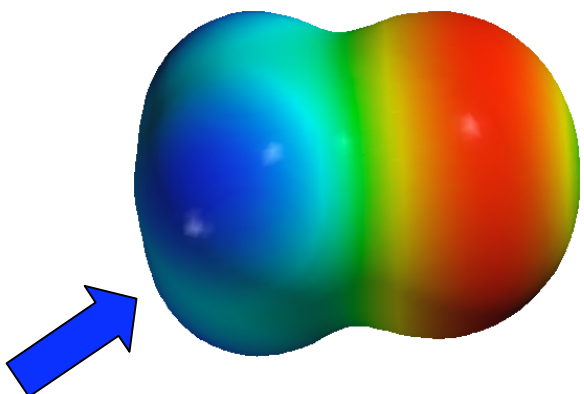
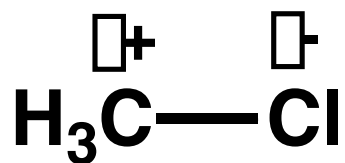


Methyl chloride

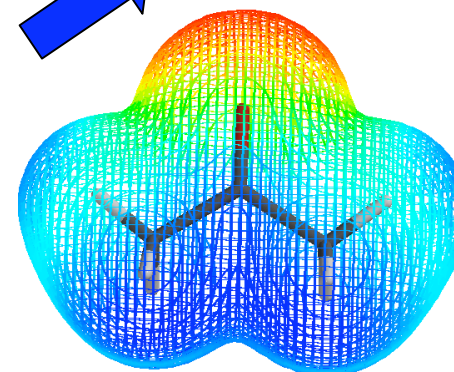
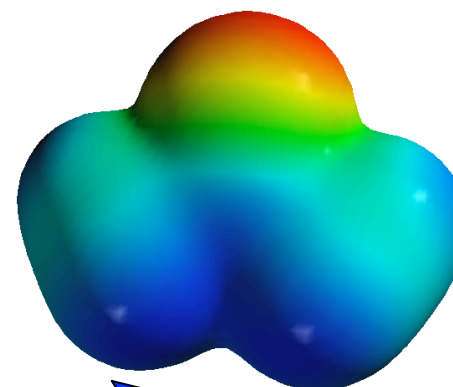
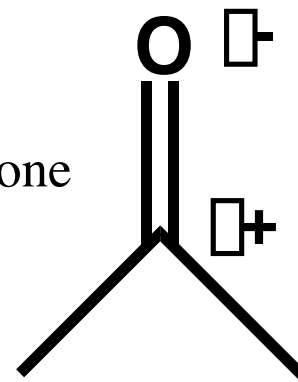


TYPICAL ELECTROPHILES

Methyl chloride



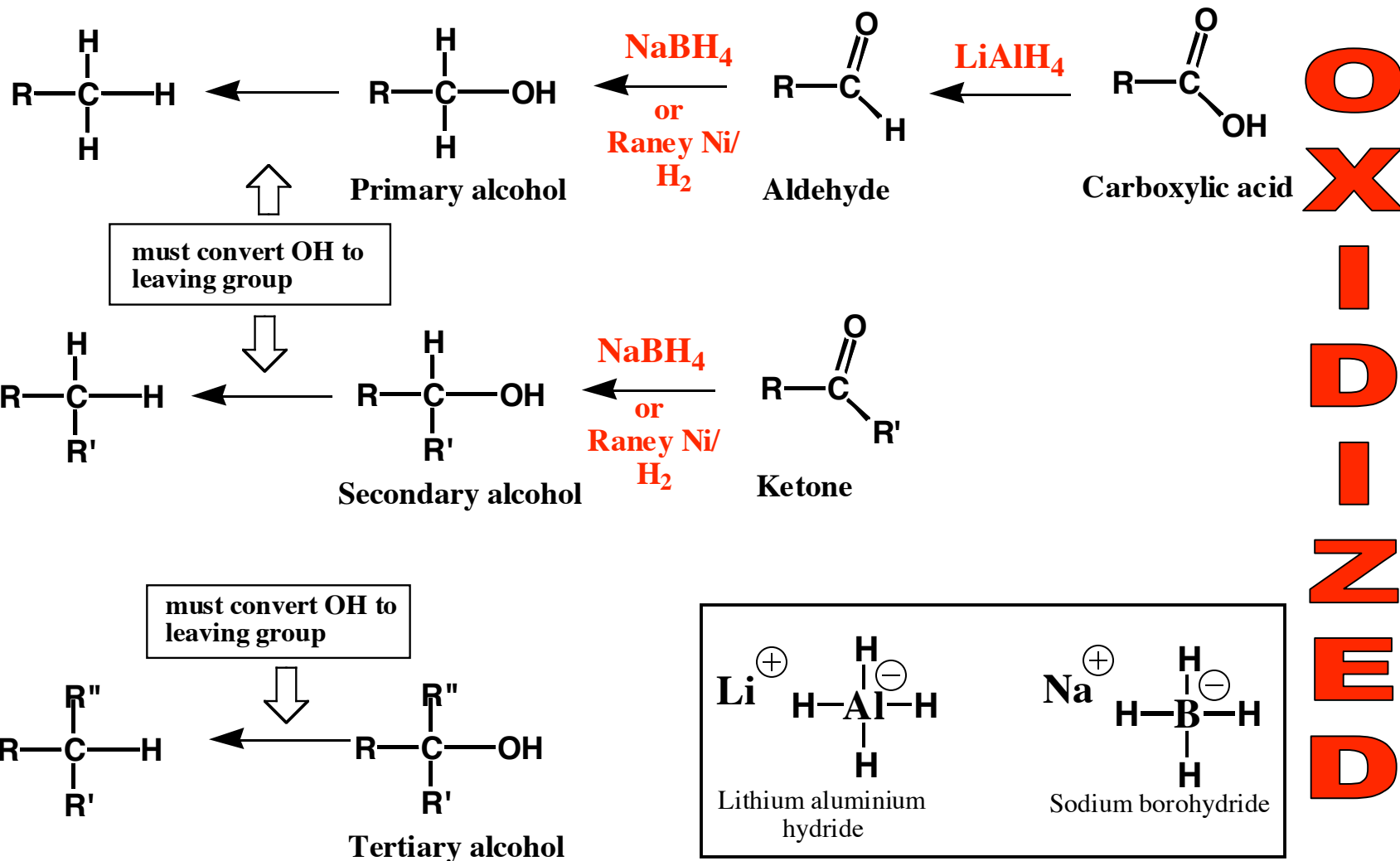
acetone



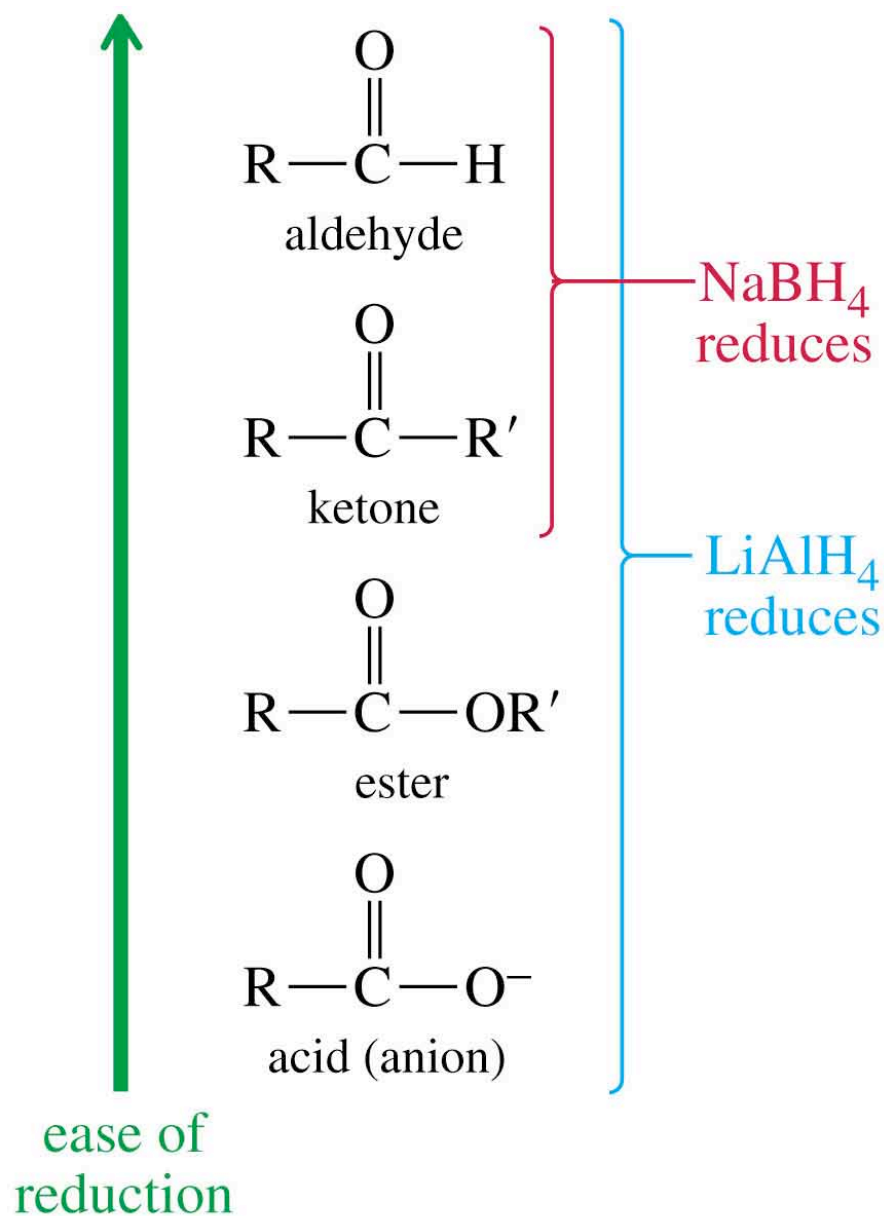
Alcohols, carbonyl compounds and carboxylic acids: REDUCTION

Reduction: Addition of H₂ (or H⁻), loss of O or O₂; loss of X₂

**R
E
D
U
C
E
D**



**O
X
I
D
I
Z
E
D**



Comparison of Reducing Agents

- LiAlH₄ is stronger.
- LiAlH₄ reduces more stable compounds which are resistant to reduction.

⇒

