


# Unit 1 - Organic Chemistry

- Characteristics of organic compounds
- Identifying and drawing isomers
- General formulas of alkanes, alkenes, alkynes, and cyclic compounds
- Sigma vs. **Pi bonding**
- Draw and name hydrocarbons that have alkyl substituents
- Aromatic Compounds 
- Name and draw the following hydrocarbon derivatives:

⇒ Organic Halides  $R-X$

⇒ Alcohols  $R-OH$  (-ol)

⇒ Ethers  $R-O-R'$

$R(H)-\overset{\overset{O}{\parallel}}{C}-H$  ⇒ Aldehydes

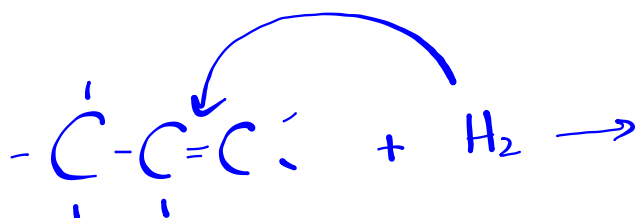
⇒ Ketones  $R-\overset{\overset{O}{\parallel}}{C}-R'$

$R(H)-\overset{\overset{O}{\parallel}}{C}-OH$  ⇒ Carboxylic Acids

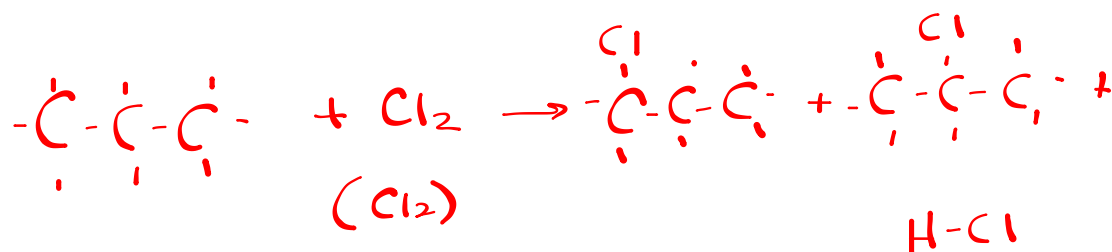
⇒ Esters  $R(H)-\overset{\overset{O}{\parallel}}{C}-O-R'$

- Reactions

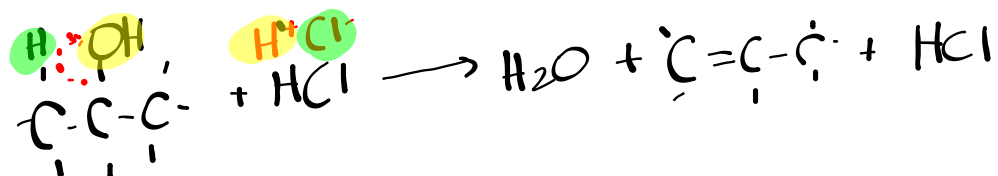
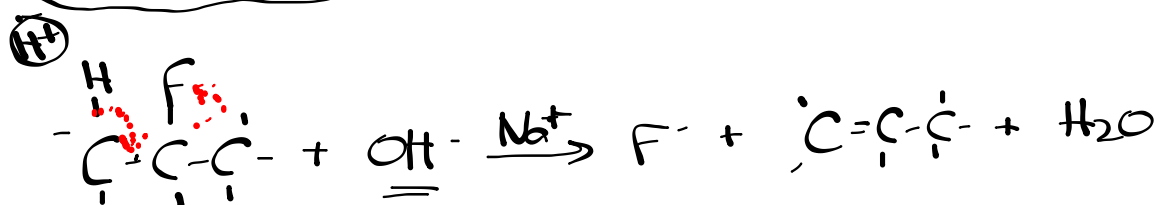


ADDITION

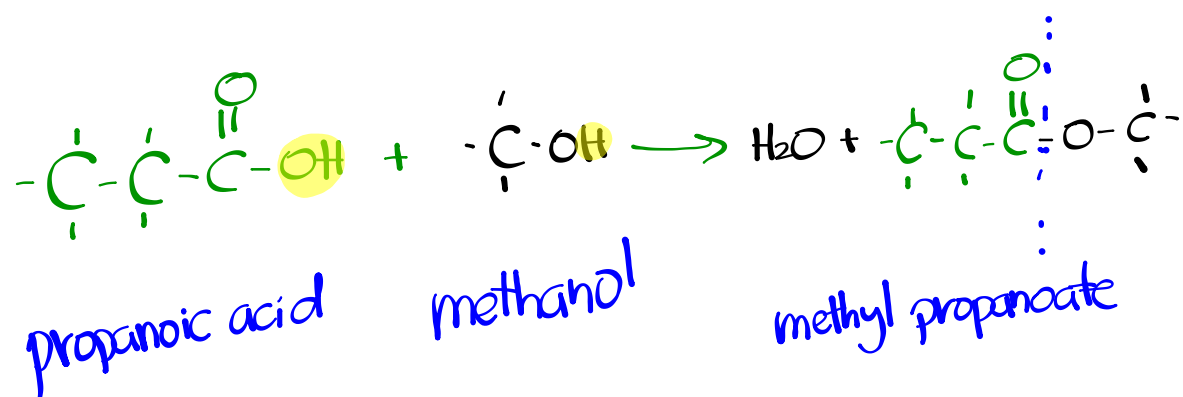
## SUBSTITUTION

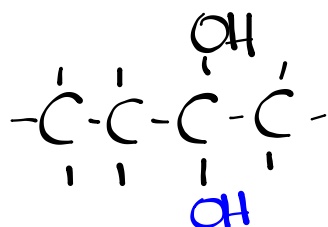


## ELIMINATION



## ESTERIFICATION





2-butanol

2,2-butane diol

$C_nH_{2n}$

$C_6H_{12} \rightarrow$  one double bond or  
Cycloalkane

# Reactions

- Cracking (*break into pieces*)
- Reforming (*two small  $\longrightarrow$  one big*)
- Combustion (*burned, common oxides*)
- Addition (*breaking a pi bond(s)*)
- Substitution (*break a C-H bond and  
replace with halide*)
- Elimination (*adding a pi bond*)
- Esterification  
(*carboxylic acid + alcohol  $\longrightarrow$  ester*)



p. 719-720 #37-46, 49, 50, 54-56, 59-61,  
63, 64

p. 757-758 #26-35, 38, 40, 43-45

# Reactions Worksheet