

Naming	
Alkane	-ane
Alkene	-ene
Alkyne	-yne
Cyclic	cyclo-
Aromatics	-benzene
Alcohol	-ol
Ether	-oxy- or -ether
Aldehyde	-al
Keytone	-one
Carboxylic Acid	-oic acid
Ester	-oate
Amine	-amine or -amino-
Amide	-amide
Thiol	-thiol

Formation Reactions	
Forming Alkanes	
Hydrogenation of <i>Alkene</i> (Addition RX)	
H ₂ + Alkene = Alkane	
Forming Alkenes	
Dehydration of <i>Alcohol</i>	
Alcohol (H ₂ SO ₄) = Alkene + H ₂ O	
Substitution RX + Elimination RX	
Alkane + Halogen = Alkyl Halide + (HCL)	
Alkyl Halide + OH ⁻ = Alkene + (Cl) + H ₂ O	

Formation Reactions	
Forming Alcohols	
Alkene + H ₂ O =(H ₂ SO) Alcohol	
HYDROGENATION RX	
Aldehyde (reducing agent) = 1 alcohol	
Keytone (reducing agent) = 2 alcohol	
Forming Ethers	
CONDENSATION RX	
Alcohol + Alcohol (H ₂ SO ₄) = Ether + H ₂ O	
Forming Aldehydes	
OXIDATION RX	
1 Alcohol + [O] = Aldehyde + H ₂ O	
Forming Keytones	
2 Alcohol + [O] = Keytone + H ₂ O	
Forming Carboxylic Acids	
Aldehyde + [O] = Carboxylic Acid	
Forming Esters (esterfication)	
Carboxylic Acid + Alcohol (H ₂ SO ₄) = Ester + H ₂ O	
Forming Amines	
Alkyl Halide + Ammonia = Amine + HI	
Forming Amides	
Carboxylic Acid + Ammonia (H ₂ SO ₄) = Amide + H ₂ O	

Other Reactions	
Combustion RX	
Complete : $\text{___} + \text{O}_2 = \text{CO}_2 + \text{H}_2\text{O}$	
Incomp: $\text{___} + \text{O}_2 = \text{CO}_2 + \text{H}_2\text{O} + \text{CO} + \text{C}$	
Alkanes	
SUBSTITUTION RX	
Alkenes & Alkynes	
ADDITION RX	
Halogenation... Hydrogenation... Hydrohalogenation... Hydration	
Esters	
HYDROLYSIS (soaponification)	
Ester + NaOH = Sodium Carboxylate + Alcohol	
Polarity	
Carboxylic Acid	
Alcohol	
Amines & Amides	
Aldehydes, Keytones, Esters	
Ethers & Alkyl Halides	
Alkenes & Aromatics	
Alkanes	



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Page 1 of 1.

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