CHEMISTRY 161 and 163

Alkane Names and Functional Groups

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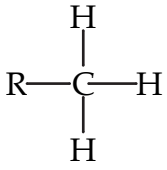
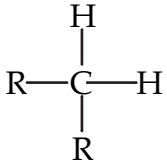
Alkane names

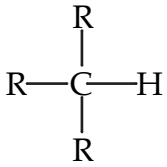
Number of carbons (n)	*Name*	*Formula* (C_nH_{2n+2})	*Number of carbons (n)*	*Name*	*Formula* (C_nH_{2n+2})
1	methane	CH_4	14	tetradecane	$C_{14}H_{30}$
2	ethane	C_2H_6	15	pentadecane	$C_{15}H_{32}$
3	propane	C_3H_8	20	eicosane	$C_{20}H_{42}$
4	butane	C_4H_{10}	21	heneicosane	$C_{21}H_{44}$
5	pentane	C_5H_{12}	22	docosane	$C_{22}H_{46}$
6	hexane	C_6H_{14}	23	tricosane	$C_{23}H_{48}$
7	heptane	C_7H_{16}	30	triacontane	$C_{30}H_{62}$
8	octane	C_8H_{18}	31	hentriacontane	$C_{31}H_{64}$
9	nonane	C_9H_{20}	32	dotriacontane	$C_{32}H_{66}$
10	decane	$C_{10}H_{22}$	40	tetracontane	$C_{40}H_{82}$
11	undecane	$C_{11}H_{24}$	50	pentacontane	$C_{50}H_{102}$
12	dodecane	$C_{12}H_{26}$	60	hexacontane	$C_{60}H_{122}$
13	tridecane	$C_{13}H_{28}$			



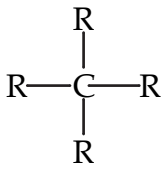
A *Primary* Carbon (1') has one substituent on carbon



A *Secondary* Carbon (2') has two substituents on carbon



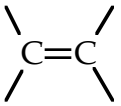
A *Tertiary* Carbon (3') has three substituents on carbon



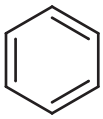
A *Quaternary* Carbon (4') has four substituents on carbon

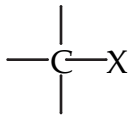
Common Functional Groups:

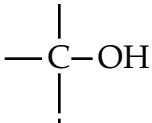
Alkane: C-H and C-C Bonds

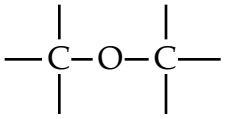
Alkene:  (olefins)

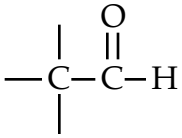
Alkyne: -C≡C- (acetylenes)

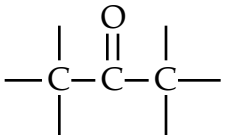
Arene: aromatic ring e.g., 

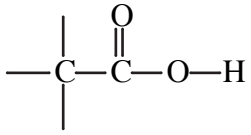
Haloalkane:  X = halogen, i.e. F,Cl, Br, I (alkyl halide)

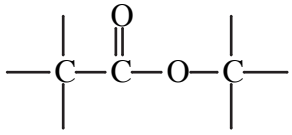
Alcohol: 

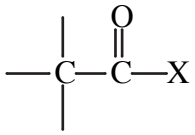
Ether: 

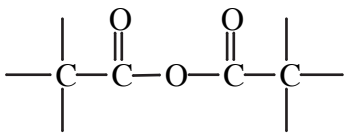
Aldehyde: 

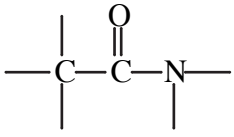
Ketone: 

Carboxylic Acid: 

Ester: 

Acid Halide:  X = halogen, i.e. F, Cl, Br, I

Anhydride: 

Amide: 

Amine: