

Definitions - Organic Chemistry

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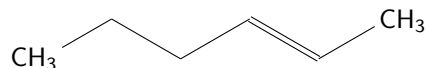
July 25, 2015

Number of Carbons	Parent chain name	Substituent Name
1	methane	methyl
2	ethane	ethyl
3	propane	propyl
4	butane	butyl
5	pentane	pentyl
6	hexane	hexyl
7	heptane	heptyl
8	octane	octyl
9	nonane	nonyl
10	decane	decyl

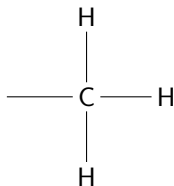
alkane - saturated hydrocarbon. It only has C and H and all bonds are single bonds. Example:



alkene - unsaturated hydrocarbon. It only has C and H there is at least one double bond. Example:

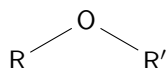


alkyl - an alkyl substituent is an alkane missing one hydrogen. A substituent is an atom or group of atoms substituted in place of a hydrogen atom on the parent chain of a hydrocarbon. Typically an alkyl is a part of a larger molecule. The smallest alkyl group is methyl, with the formula CH₃. Example:

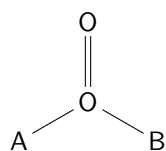


R - used to designate a generic (unspecified) alkyl group in a structural formula.

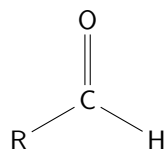
ether



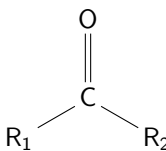
carbonyl - a carbonyl group is a functional group composed of a carbon atom double-bonded to an oxygen atom: $\text{C}=\text{O}$. A compound containing a carbonyl group is often referred to as a carbonyl compound. Example carbonyl compound where A and B can be anything:



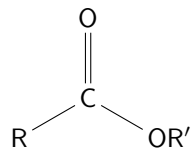
aldehyde



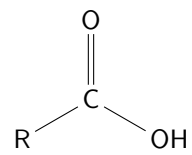
ketone



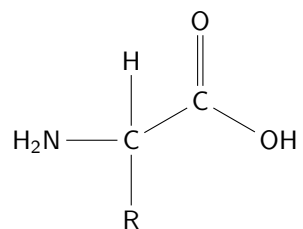
ester



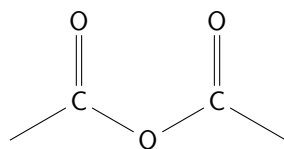
carboxylic acid



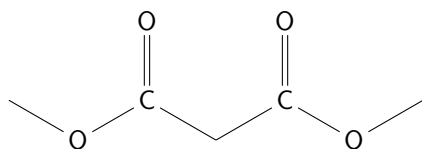
amino acid



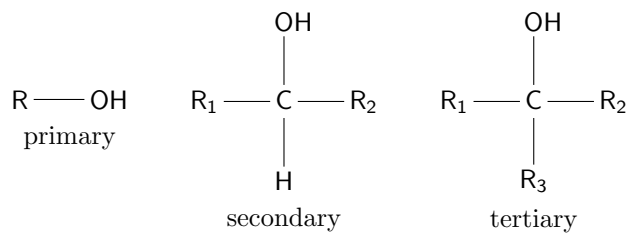
anhydride



malonate

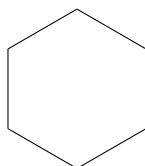


alcohol - Any R with an OH, i.e., ROH

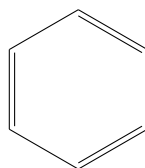


aryl - any functional group or substituent derived from an aromatic ring, be it phenyl, naphthyl, thienyl, indolyl, etc.

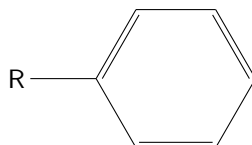
cyclohexane



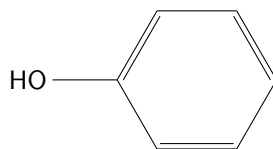
benzene



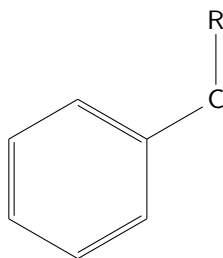
phenyl



phenol - simplest phenyl



benzyl



Other prefixes

Number	Prefix
1	mono-
2	di-
3	tri-
4	tetra-
5	penta-
6	hexa-
7	hepta-
8	octa-
9	nona-
10	deca-

