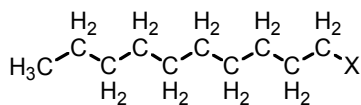


Common Organic Chemistry Nomenclature Crash Course

The language of organic chemistry is complex but very systematic. IUPAC rules for naming can be found online at <http://www.chem.qmul.ac.uk/iupac/>. Without getting caught up in the rules, the key concept in organic nomenclature is to convert names to structures and vice versa without ambiguity. This sheet should not be used for absolute rules, but a good starting point to understanding the language of organic chemistry

Alkyl Chains (R)

methyl	$\text{H}_3\text{C}-\text{X}$
ethyl	
propyl	
butyl	
pentyl	
hexyl	
heptyl	
octyl	
nonyl	
decyl	



"INFFIX"

Single Bonds = ANE (propane)
 Double Bonds = ENE (butene)
 Triple Bonds = YNE (pentyne)

The Fun of Numbering!

Numbering is essential to distinguish isomeric structures from one another. There is a long list of numbering rules you can look-up.

Here are the two most general rules:
 1- Always use the longest chain containing the "parent" functional group
 2- Branches and substituents should have lowest possible number

A Few More Things...

Of course there are many other rules that are not listed here. Other things to think about include:

- Stereochemistry (R/S ; cis/trans ; E/Z)
- Mulicyclo systems (bicyclo, tricyclo, etc.)
- Rings with heteroatoms
- Common Names accepted by IUPAC

Functional Groups

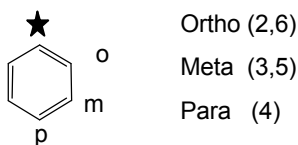
	"Prefix" (Substituent)	Class	"Suffix"
-OH	hydroxy	alcohol	ol
-NH ₂	amino	amine	amine
-CN	cyano	nitrile	nitrile
-SH	mercapto	thiol	thiol
-X	halo	halide	halide
-Ph	phenyl		
-NO ₂	nitro		

$\text{R}-\overset{\text{O}}{\parallel}{\text{C}}-\text{H}$	← R can be H	aldehyde	alkan"al"
$\text{R}-\overset{\text{O}}{\parallel}{\text{C}}-\text{R}$		ketone	alkan"one"
$\text{R}-\overset{\text{O}}{\parallel}{\text{C}}-\text{OH}$		carboxylic acid	alkan"oic acid"
$\text{R}-\overset{\text{O}}{\parallel}{\text{C}}-\text{O}-\text{R}$		ester	alkan "oate"
$\text{R}-\overset{\text{O}}{\parallel}{\text{C}}-\text{N}(\text{R})_2$	← R can be H	amide	alkan"amide"
$\text{R}-\text{O}-\text{R}$		ether	alk"oxy"alkane

Mono-substituted Benzenes

	toluene		anisole
	aniline		benzoic acid
	acetophenone		phenol
	styrene		benzaldehyde

Numbering Benzene



Common Mistake

BENZYL vs PHENYL vs PHENOL

