IUPAC RULES

FOR THE NAMING OF ORGANIC COMPOUNDS

1. Find the longest chain, which will serve as the basis for the name.
   a. If there is a functional group, choose the longest chain that includes the functional group.
2. Number the chain from one end to the other.
   a. If there is a functional group, start numbering from the end closest to the functional group, meaning the end that assigns the smallest possible number to this group.
   b. If there is no functional group, start numbering from the end closest to a substituent, meaning the end that assigns the (first) substituent the smallest number.
3. In numerical order, name each substituent according to its position and its type.
   a. Group identical substituents together with the Greek prefixes "di-," "tri-,", "tetra-," etc.
   b. Use commas between numerals, and hyphens to separate numerals from letters.
4. After the substituents, name the (most important) functional group and give its numerical position. If several functional groups are present, you must name them all.

Chains:	**Hydrocarbon substituents:**	**Other substituents:**	**Functional groups:**
CH_4 methane	CH_3- methyl	-F fluoro-	= -ene (double bond)
CH_3CH_3 ethane	CH_3CH_2- ethyl	-Cl chloro-	≡ -yne (triple bond)
$CH_3CH_2CH_3$ propane	$CH_3CH_2CH_2$- propyl	-Br bromo-	
$CH_3CH_2CH_2CH_3$ butane	$(CH_3)_2CH$- isopropyl	-I iodo-	-OH -ol (alcohol)
$CH_3(CH_2)_3CH_3$ pentane	$CH_3CH_2CH_2CH_2$- butyl	-OH hydroxy-	-CHO -al (aldehyde)
$CH_3(CH_2)_4CH_3$ hexane	$(CH_3)_2CH_2CH_2$- isobutyl	$-NO_2$ nitro-	C=O -one (ketone)
$CH_3(CH_2)_5CH_3$ heptane	$(CH_3)_3C$- tert-butyl	$-NH_2$ amino-	-COOH -oic acid (carboxylic acid)
$CH_3(CH_2)_6CH_3$ octane		C=O keto-	-COO- -oate (ester)
$CH_3(CH_2)_7CH_3$ nonane	C_6H_5- phenyl		$-NH_2$ amine
$CH_3(CH_2)_8CH_3$ decane			$-CONH_2$ amide
11C is hendecane, etc.	CH_3O- methoxy, etc.		-SH thiol
20C is eicosane			
21C is heneicosane, etc.			cyclo- if a ring