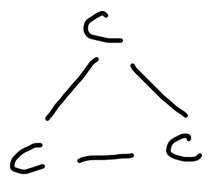
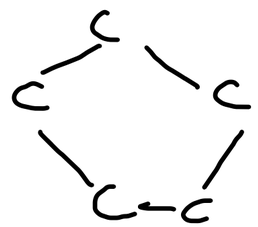
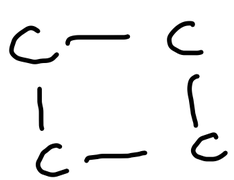
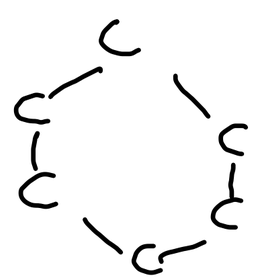
Ring chain Structures : (common Name).

→ Cyclopropane 

→ Cyclopentane 

→ Cyclo Butane 

→ Cyclo Hexane 

-Cyclo Structures are Alkane based ring Structure that are formed when number of Carbon are equal to number to bonds.

→ The word cyclo is added to the name number to represent that it is a closed Structures.

→ Closed structures or ring structures do not have IUPAC naming

For general structures ; only Benzene rings have both IUPAC & common naming

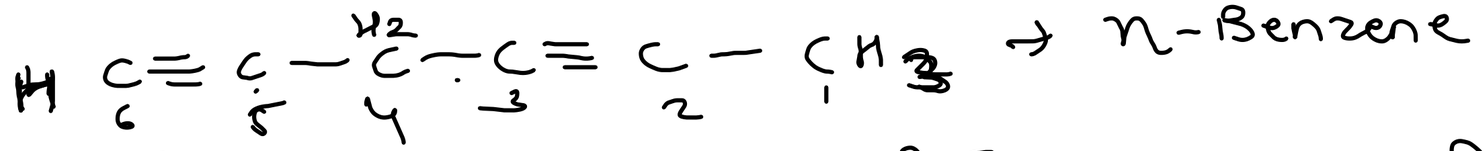
Benzene

→ Benzene ⇒ C_6H_6.

* ring structure

Benzene.

* straight chain or Aliphatic structures



→ n-Benzene

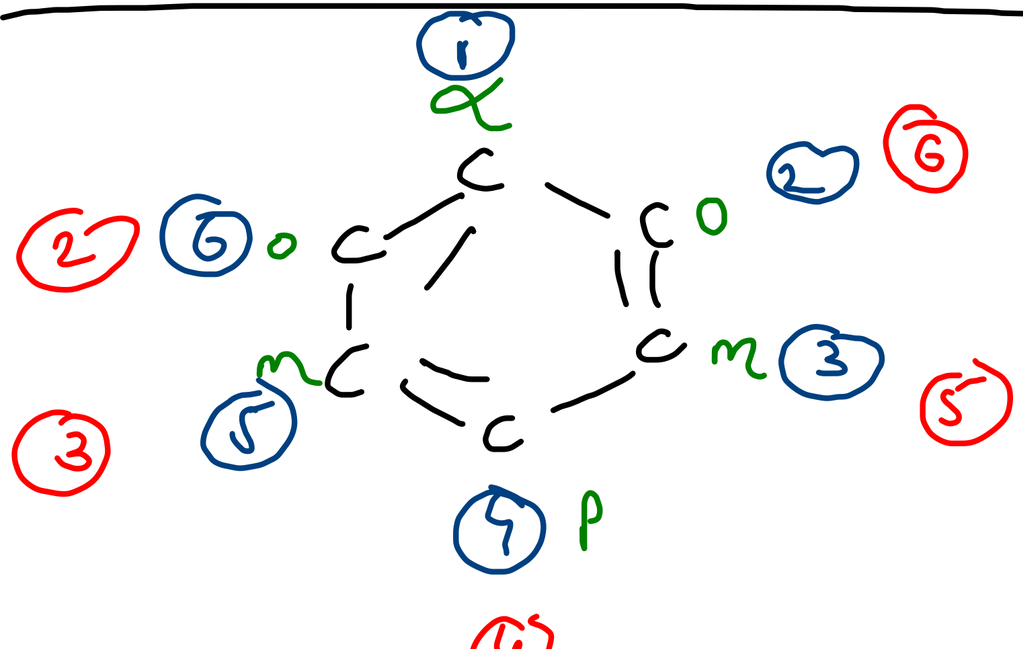
→ Benzene is the common name & IUPAC name for C_6H_6 only ring structure

→ When Benzene is in aliphatic structure or straight chain structure either n-Benzene or n-Hexyne is used as a common name

→ IUPAC naming for n-Benzene or n-Hexyne is

Hex-2,5-yne.

Benzene & Substituted Benzenes.



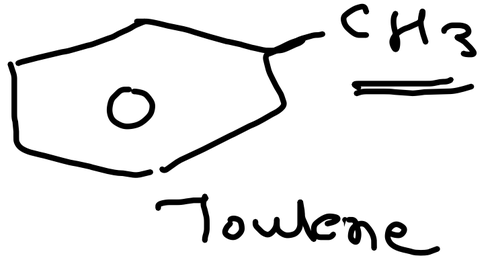
α - 1st Carbon

para - (p) is the 4th Carbon

ortho → 2nd & 6th Carbon

meta → 3rd & 5th Carbon

→ ortho, meta & para are used to describe any substitutions that occur in benzene by common naming

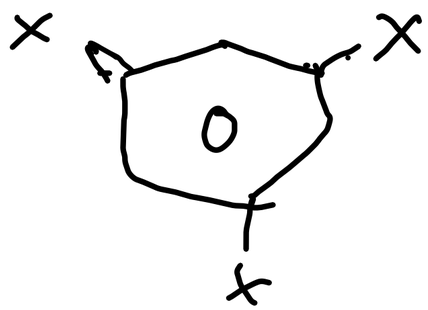


Toulene

O-methylbenzene → Common name

2-methyl Benzene → IUPAC

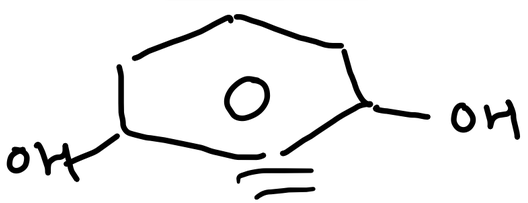
→ In IUPAC we the specific carbon number. to denote substitutions (we the green color number sequence as prefrence from the before given structure)



Sym-Tri halo Benzene //

2, 4, 6 - Tri halobenzene → IUPAC

- Tri halophenol
o, o - dihalo, p - halo Benzene } common name

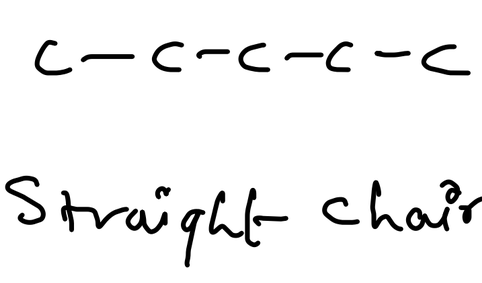


3, 5 dihydroxy Benzene → IUPAC

m, m - dihydroxy Benzen } commonname
dihydroxy
Benzene

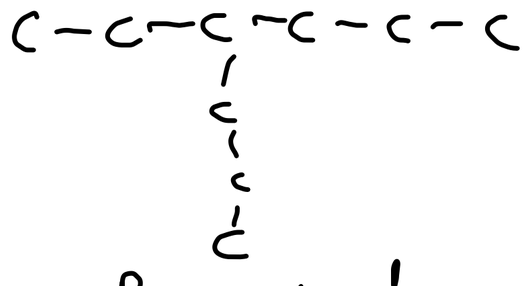
Aliphatic or chain Structures.

→ Aliphatic structures are Carbon chain structures either straight or branched.



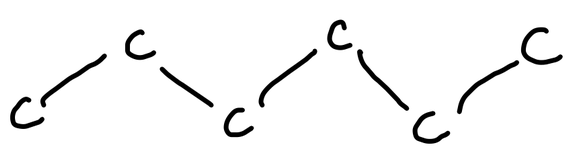
Straight chain

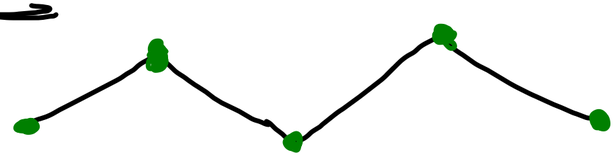
OR



Branched.

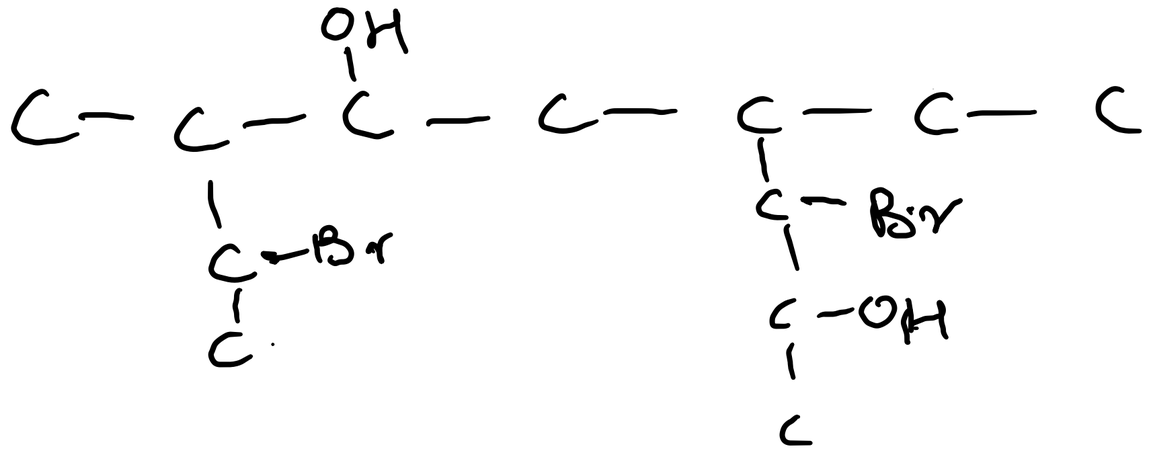
→ Aliphatic Structures are also represented by zigzag lines, where the vertices represent carbons





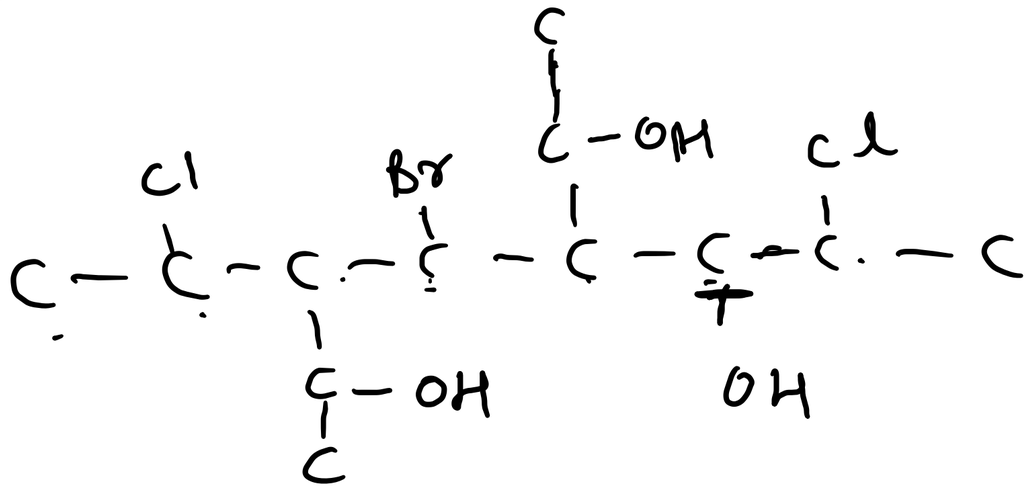
→ Nomenclature wise both the representations i.e zig zag or straight & branched structures are named in same way. may it be by IUPAC or common name

(1)

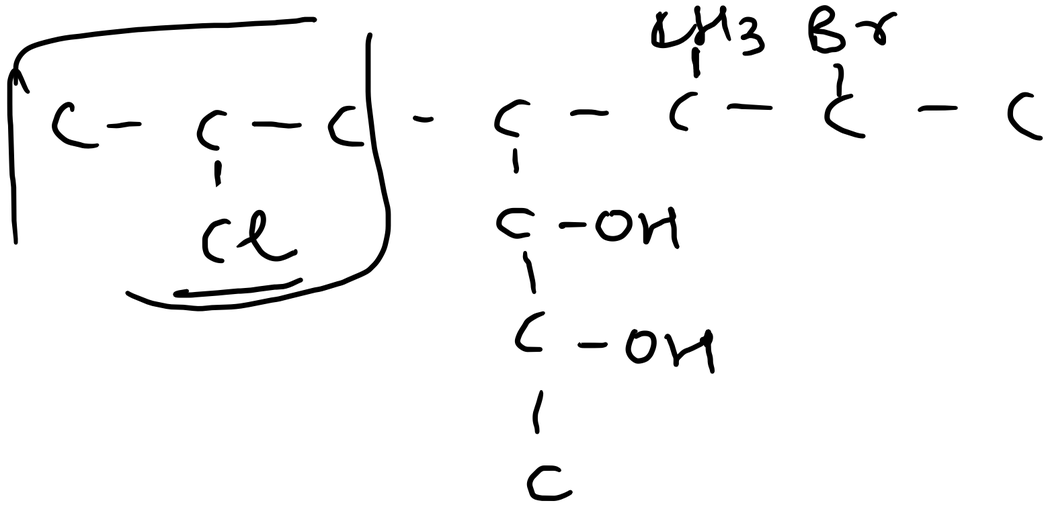


2, 7-dibromo,
6-Ethyl, 3-methyl,
4, 8 dihydroxy
Nonane

(2)



2, 7, dichloro, 4-Bromo
3, 5-diethylalcohol
OCt-5-ol

(3) 

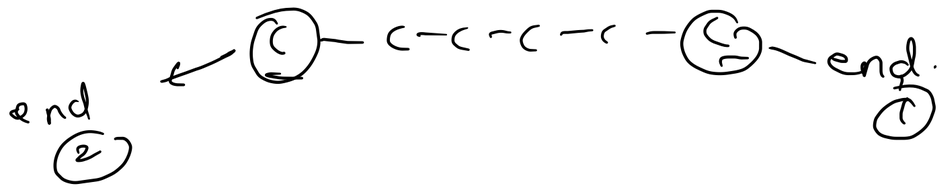
2-Bromo, 3-Methyl
4- Propropylchloride,
5,6-dihydroxyheptane

Preference for naming while writing meaning whether we should use suffix or prefix

Carbon
① carboxylic acid
② carboxy groups
③ ethers
④ ester
⑤ Halogens
⑥ ketones
⑦ Alcohols
⑧ Aldehydes

Common Naming of Aliphatic Chains.

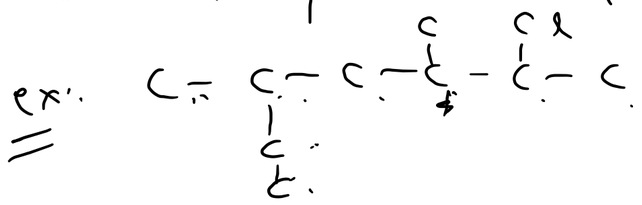
→ In Common naming we never number the Carbons, there are just 2 ends to the chain



→ we Only consider Straight chain as the main chain & branches are not considered for longest chain

→ There is no Concept of longest chain in Common Name.

→ we count the total number of Carbons including the straight chain & branched chain & find parent Alkene

ex.  → Iso Nonyl Chloride

all Carbons are considered including the branch Carbon.

→ If there are only Single bond in the chain then we use "Alkyl" as the prefix

→ If there is even one double bond in the chain then we used "Alkenyl" as the prefix

→ If there is even one tripple bond in the chain then we use "Alkynyl" or "Alkinyl" in the prefix

→ If there is one double bond & one single bond we use Alkenyl in the prefix

→ If there is one double & one Triple bond then we use "Alkinyl", → C=C-C≡C-C-Cl

→ Even if the double & Triple bonds are present in the branched chain we still use the same naming type

① Terminal Functional groups.

→ Whenever the functional groups are at the terminal ends of the straigh chain, the Alphabet "n" is added as prefix

ex:

$CH_3-CH_2-CH_2-CH_2+Cl \rightarrow$ n- Butyl chloride

① $Cl-CH_2-CH_2-CH_2-CH_3 \rightarrow$ n - Butyl chloride

(2) $CH_3-CH_2-CH=CH-CH_2-OH$

n-Pentenyl Alcohol

$OH-CH_2-CH=CH-CH_2-CH_3$ → n-pentenyl Alcohol

(3) $CH_3-CH_2-CH=C(Cl)-CH_2-Cl$

n-Heptinylchloride

$Cl-CH_2-C\equiv C-CH=CH-CH_2-CH_3$ → n-Heptinylchloride