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Chemistry Organic

:: PRESENTED BY ::

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Semester –I Unit –I

Nomenclature of organic Compounds

□ Introduction :

□ Defination of organic compound :

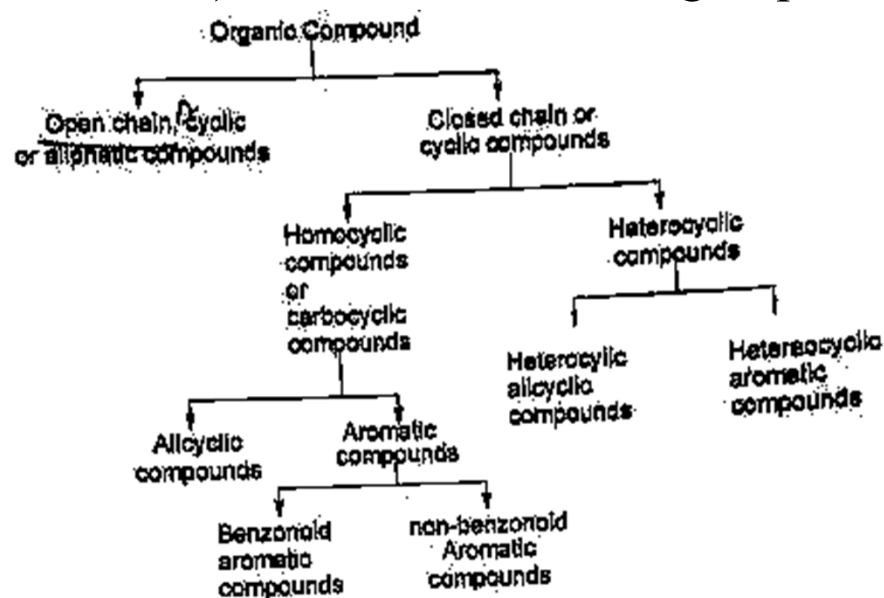
The carbon containing compounds excluding CO, CO₂, MCO₃, M₂OC₃ & CS₂ are known as organic compounds.

□ Types of organic compounds

1) organic compounds is classified in two ways

1) Based on structure

2) Based on functional group



- ❑ Classification of Organic compound
- ❑ Functional Groups

The atom or group of atoms in a molecule gives characteristics chemical property is called as functional groups.

Class	Functional group
Alkenes (olefins)	>C=C<
Alkynes	$\text{-C}\equiv\text{C-}$
Alkyl halide	$\text{-X (F, Cl, Br, I) (Halo)}$
Alcohols	-OH (Hydroxy)
Thiol	-SH
Aldehyde	$\begin{array}{c} \text{O} \\ \parallel \\ \text{-C-H} \end{array}$ Aldehydic
Ketones	$\begin{array}{c} \text{O} \\ \parallel \\ \text{-C-} \end{array}$ Ketone
Ethers	$\begin{array}{c} \text{-C-O-C-} \\ \quad \end{array}$
Carboxylic acid	$\begin{array}{c} \text{O} \\ \parallel \\ \text{-C-OH} \end{array}$ Carboxyl
Amide	$\begin{array}{c} \text{O} \\ \parallel \\ \text{-C-NH} \end{array}$ (Amide)
Amines	-NH_2 (Amino)
Cyanides/Nitriles	$\text{-C}\equiv\text{N}$ (Cyanol)
Esters	$\begin{array}{c} \text{O} \\ \parallel \\ \text{-C-O-R} \end{array}$ (Ester)
Acid halide	$\begin{array}{c} \text{O} \\ \parallel \\ \text{-C-X} \end{array}$ (Acyl halides)
Sulphonic acid	$\text{-SO}_3\text{H}$



□ Basic Rules of IUPAC Nomenclature

1. Prefix : Prefix is used to indicate substituent which is attached with parent chain.
2. Rootword : The basic unit is a series of rootwords which indicate linear continuous chains of carbon atom. Root words of carbon chain is summarized in following table.

Chain lengths	Root word
C1	Meth-
C2	Eth-
C3	Prop-
C4	But-
C5	Pent-
C6	Hex-
C7	Hept-
C8	Oct-
C9	Non-
C10	Dec-
C11	Undec-
C12	Dodec-
C20	Icos-
C21	Unicos-
C30	Triacont-

Derived From Trivial name

Derived from Greek name

Primary suffixes:



□ IUPAC Name Organic Class ;

1. Alkanes
2. Alkenes
3. Alkynes
4. Haloalkanes
5. Alcohols
6. Ethers
7. Aldehydes & Ketones
8. Bifunctional compounds
8. Carboxylic Acid
9. Acid Halide
10. Ester
11. Acid Anhydride
12. Amides
13. Nitro compounds
14. Cyanides & Amines

Nomenclature of Aromatic compound :-

An aromatic compound may contain one or more side chains of carbon atoms.

Example : Aromatic hydrocarbons , Aryl groups, Halogen derivatives, Hydroxy derivatives, Aldehydes & ketones, Nitro compounds, Amines , Carboxylic acid, Cyanides & Iso cyanides, Polyfunctional aromatic compounds, Bicyclic compounds, Polycyclic arens



Thank

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