THE P-BLOCK ELEMENTS

NOMENCLATURE OF ORGANIC COMPOUND

✤ Nomenclature of Organic Compound

Mainly three system are adopted for naming of an organic compound:

- (a) Common Name or Trivial Name System
- (b) Derived Name System
- (c) IUPAC name of Geneva name System

Some Common Names Based and Source

S.No.	Compound	Common Name	Source
1	CH ₄	Marsh gas (Free damp)	Marshy places
2	СН3ОН	Wood spirit (Carbinol)	Destructive distillation
			of wood
3	СН ₃ СН ₂ ОН	Grain alcohol	Grain
4	$\operatorname{NH}_2 - \operatorname{C}_{\underset{0}{\parallel}} - \operatorname{NH}_2$	Urea (Carbamide)	Urine
5	НСООН	Formic acid	Formica (Red ants)
6	СН ₃ СООН	Acetic acid	Acetum (Vinegar)
7	НООС-СООН	Oxalic acid	Oxalis plant
8	СН ₃ – СН – СООН ОН	Lactic acid	Lactam (Milk)
9	СН ₃ СН ₂ СН ₂ СООН	Butyric acid	Butter
10	НО – СН – СООН	Tartaric acid	Tamarind
	110 - 011 - 00011		
11	НО – СН – СООН	Malic acid	Malum (Apple)
	00011		
12	CH2 – COOH	Citric acid	Citron (Lemon)
	ĊH2 – COOH		

Chemistry

Some Frequently Used Common Names	(To be Remember)
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S.No.	Common Name	Structure Formula
1	Isooctane	$\begin{array}{c} CH_3 \\ I \\ CH_3 - CH - CH_2 - C \\ I \\ CH \\ CH \\ CH_3 \end{array}$
2	Triptane	$\begin{array}{c} CH_3 \\ I \\ CH_3 - CH - C - CH_3 \\ I \\ CH \\ CH \\ CH_3 \end{array}$
3	Ethylene	$H_2C = CH_2$
4	Acetylene	$HC \equiv CH$
5	Allylene	$HC \equiv C - CH_3$
6	Crotonylene	CH ₃ – C≡C – CH ₃
7	Allene	CH ₂ =C=CH ₂
8	Ketene	CH ₂ =C=0
9	Acetone or Dimethyl Ketone	$CH_3 - C - CH_3$
10	Paraldehyde	CH ₃ I CH ₃ – C – CHO I CH ₃
11	Chloral	Cl ₃ C–CHO
12	Acrolein or Acryl aldehyde	СН ₂ =СН-СНО
13	Acetophenone or Methyl phenyl Ketone	$CH_3 - C_0 - O_0$

Chemistry

Class-XI

14	Benzophenone or Diphenyl Ketone	
15	Pinacol	$CH_3CH_3CH_3 - C - C - C - CH_3OH OH$
16	Pinacolone	$\begin{array}{c} CH_3\\ I\\ CH_3 - C - C - C - CH_3\\ I\\ 0 & CH_3 \end{array}$

Format for IUPAC name

s–prefix	+	p–prefix	+	word root	+	p–suffix	+	s–suffix
Substituen	its	cyclo		Alk word		-ane		According to main
with locan	ts			according to	carbo	on –ene		functional group
				in parent C cl	hain	-yne		given in priority table

(a) Locant: - Locants are separated by (,) comma.

- Locants and alphabets are separated by hyphen (-). [2, 3-dimethyl pentane]
- > di, tri, iso, neo and cyclo are neither separated by comma nor by hyphen
- (b) **Prefix: -** According to substituents.

Prefix (es) are written in alphabetical order before root word.

prefix $\leftarrow \begin{bmatrix} 1^{\circ} \text{ or } p - prefix \\ 2^{\circ} \text{ or sec.} - prefix \end{bmatrix}$

Cyclo is 1º prefix and used for cyclic compound. 2º prefix is used for substituents and written before 1º prefix.

For acyclic compounds: 2° prefix + Root word + 1° Suffix + 2° suffix.

Substituents	Prefix
-R	Alkyl group
-X (F, Cl, Br, I)	Halo
-0, -N=0	Nitrite
-CH ₂ OH	Hydroxy methyl

Chemistry

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-NHC ₂ H ₅	Ethyl amino
Substituents	Prefix
-OR	Alkyl group
-N_0	Nitro
-N=0	Nitroso
-CH ₂ Cl	Chloro methyl

(c) Word root: - According to number of carbons in parent C-chain.

Number of	Root Word
carbons	
1	Meth
2	Eth
3	Prop
4	But
5	Pent
6	Hex
7	Hept
8	Oct
9	Non
10	Dec
11	Undec
12	Dodec
13	Tridec

(d) **Primary suffix: -** According. to saturation .and unsaturation.

 $C - C \rightarrow ane$ $C = C \rightarrow ene$ $C \equiv C \rightarrow yne$

(e) Secondary Suffix: - According to senior most of F. G.



3-Formyl-4-hydroxy-2-methyl pentatonic acid

Chemistry

S. NO.	Functional group	Prefix	Suffix	
1.	–(C) OOH (carboxylic acid)	× carboxy	oil acid	
	-СООН		carboxylic acid	
2.	–SO ₃ H (sulphonic acid)	sulphur	sulphonic acid	
3.	$ \overset{O}{\parallel} \\ \overset{(C)}{\rightarrow} -0 (anhydride) \\ \overset{(C)}{\rightarrow} -0 (anhydride) $	×	oil anhydride	
4.	–(C) OOR (ester) –COOR	× alkoxy carbonyl or car alkoxy	alkyloate	
5.	-(C)OX (acid halide)	imes halo formyl	oyl halide carbonyl halide	
6.	–(C)ONH2 (amide) –CONH2	× Carbonyl	carboxamide nitrile	
7.	–(C)N (cyanide) –CN	× cyano	nitrile carbonitrile	
8.	$-N \stackrel{?}{=} C$ (isocyanide)	isocyanic/carbyl amino	isonitrile/carbyl amine	
9.	–(C)HO (aldehyde)	0X0	al	
	—(C)— 0	formyl	carbaldehyde	
	-СНО			
10.	(Ketone)	keto/oxo	one	
11.	–OH (alcohol)	hydroxyl	ol	
12.	–SH (thio alcohol)	mercaptan	thiol	
13.	–NH ₂ (amine)	amino	amine	

Note: (C) atom written in brackets means that it has been included in the parent chain.

SUBSTITUENTS	PREFIX	SUBSTITUENTS	PREFIX
-R	alkyl	-X	halo
-NH2	amino	-N <0 0	nitro
-0-N=0	nitrito	-N=0	nitroso
-OCH ₂ CH ₃	ethoxy	-CH2-OH	hydroxyl methyl
-CH ₂ -Cl	chloro methyl	-NH-CH ₃	methyl amino
-S-	thiol		

Chemistry

СН2-С-О-	acetoxy		propanoyloxy
	ethanoyloxy	$CH_3CH_2 - C - O - \parallel$	
0		Ö	
	benzoyloxy	-OR	Alkoxy
C6H5−C−O− ∥		-OC6H5	phenoxy
0			