

Nomenclature of Organic
compounds
BSc. Part I (Hons.).
Organic Chemistry

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Nomenclature

Why is nomenclature necessary?

Organic chemistry is a vast branch as millions of organic compounds are already known and thousands of new compounds are being added to this list every year. In order to facilitate the study of such large number of compounds. Therefore it is necessary to classify the organic compounds. In order to classify this organic compounds the term "Nomenclature" comes into picture.

What is nomenclature?

Nomenclature means the assignment of names to the organic compounds. The naming of organic compounds is an important aspect in the study of organic chemistry as their number is very large and variety of molecular structures exist in their molecules. The field has become more complex on the phenomenon of the isomerism. There are two main systems of nomenclature of organic compounds.

They are

1. Trivial system
2. IUPAC system

Rules for organic nomenclature

For naming the organic compounds systematically first we have to first study about the following three features

- (a) Root word
- (b) Primary suffix
- (c) Secondary suffix
- (d) Prefix

Root word

The basic unit in organic nomenclature is the root word. Chains containing one to four carbon atoms are known by special root words while chains from C5 onwards are known by greek number roots.

Chain length

Root Word

C1	Meth-
C2	Eth-
C3	Prop-
C4	But-
C5	Pent-
C6	Hex-

IUPAC names are formed from Root, Primary and secondary suffixes

Now let us see how the IUPAC names are formed from the Root, Primary and the Secondary suffixes

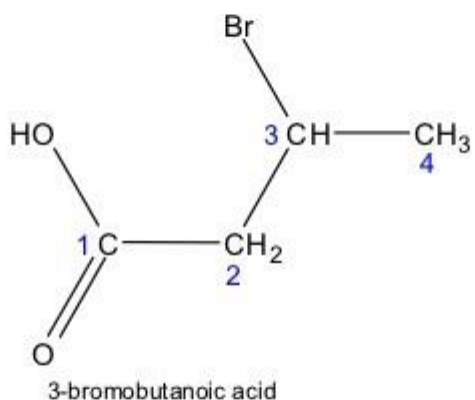
Homologus Series	Root Word	Primary Suffix	Secondary Suffix	IUPAC name
Alcohols (saturated)	Alk	-ane	-ol	Alkanol
Alcohols (unsaturated)	Alk	-ene	-ol	Alkenol
Alcohols (Unsaturated) One triple bond	Alk	-yne	-ol	Alkynol
Aldehydes	Alk	-ane	-al	Alkanal

Arrangement of Prefixes, Root word and Suffixes

These are arranged as follows while writing the name in such a manner.

IUPAC name = Prefixes+Root word+Primary Suffix+ Secondary suffix

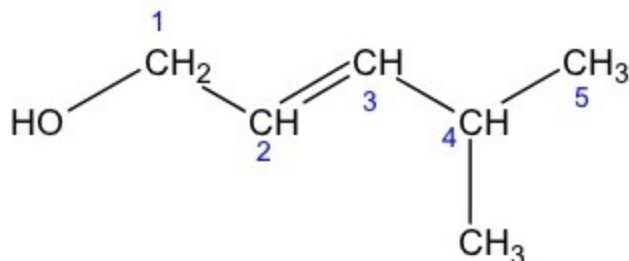
Example 1



If we consider the above example then

1. Prefix= Bromo
2. Root word = But
3. Primary suffix= ane
4. Secondary suffix= oic acid
5. No of Carbons = 4

Example 2



4-methylpent-2-en-1-ol

In the above given example

1 Prefix= Methyl

2 Root word = Pent

3 Primary suffix= ene

4 Secondary suffix = ol

5 Number of Carbons = 5

Hence the name of the given compound is

4-methylpent-2-en-1-ol