Chemistry

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Contents

1 Carbon

Notes about carbon and organic chemistry!

1.1 What is it?

Carbon is an element which is characterized for being the 4th most abundant element in the universe. It is considered a fundamental pillas as it can form 4 covalent bonds which allows it to combine in various forms.

Substances that have Carbon:

- Hidrocarbons (Ethane)
- Carbohydrates (Glucose)
- Proteins (Amino Acids)
- Lipids (Phospholipids)
- Nucleic Acids

1.2 Alcalines with Carbon

There are 2 types of nomenclature for alcalines with carbon:

- Lineal: The carbon atoms are in a line
- Ramified: The carbon atoms are in a branched structure

The naming for alcalines with carbon is done by the number of carbon atoms in the chain. The prefixes are:

- Meth-: 1 carbon atom
- Eth-: 2 carbon atoms
- Prop-: 3 carbon atoms
- But-: 4 carbon atoms
- Pent-: 5 carbon atoms
- Hex-: 6 carbon atoms
- Hept-: 7 carbon atoms
- Oct-: 8 carbon atoms
- Non-: 9 carbon atoms
- Dec-: 10 carbon atoms

- Undec-: 11 carbon atoms
- Dodec-: 12 carbon atoms
- Tridec-: 13 carbon atoms
- Tetradec-: 14 carbon atoms
- Pentadec-: 15 carbon atoms
- Hexadec-: 16 carbon atoms

The other prefixes for general number naming are:

- Di-: 2 atoms
- Tri-: 3 atoms
- Tetra-: 4 atoms
- Penta-: 5 atoms
- Hexa-: 6 atoms
- Hepta-: 7 atoms
- Octa-: 8 atoms
- Nona-: 9 atoms
- Deca-: 10 atoms
- Undeca-: 11 atoms
- Dodeca-: 12 atoms
- Trideca-: 13 atoms
- Tetradeca-: 14 atoms
- Pentadeca-: 15 atoms
- Hexadeca-: 16 atoms

1.2.1 Lineal

The lineal alcalines are the simplest form of alcalines with carbon. They are named using the prefix corresponding to the number of atoms and then -ane. They are characterized for having the carbon atoms in a line.

Examples:

- Methane: CH_4
- Ethane: $CH_3 - CH_3$
- Propane: $CH_3 - CH_2 - CH_3$
- Butane: $CH_3 - CH_2 - CH_2 - CH_3$

1.2.2 Ramified

The ramified alcalines are a more complex form of alcalines with carbon. The naming is more complicated and it is done by the number of atoms in the longest chain and then the number of atoms in the branches. The branches are named by the number of atoms and then the position in the chain. For example, 2-Methylbutane has 4 carbon atoms in the longest chain and 1 carbon atom in the branch in the 2nd position.

$$\begin{array}{l} CH_3 - CH_2 - CH_2 - CH - CH_3 \\ \qquad\qquad\qquad\qquad\quad | \\ \qquad\qquad\qquad\qquad\quad CH_3 \end{array}$$