

CHEMISTRY STUDY MATERIALS FOR CLASS 9

(BASED ON CHAPTER 3: ATOMS AND MOLECULES)

GANESH KUMAR

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MODERN SYMBOLS OF ELEMENTS

The modern symbols of elements are derived from their English or Latin names, which are made up of either the first letter, the first and second letter or the first letter and a letter appearing later in the name of the element.

Element's name	Symbol	Latin Name	Element's name	Symbol	Latin Name
Hydrogen	H	—	Nickel	Ni	—
Oxygen	O	—	Manganese	Mn	—
Boron	B	—	Calcium	Ca	—
Carbon	C	—	Chlorine	Cl	—
Fluorine	F	—	Chromium	Cr	—
Iodine	I	—	Cobalt	Co	—
Nitrogen	N	—	Bromine	Br	—
Phosphorus	P	—	Lead	Pb	Plumbum
Sulphur	S	—	Mercury	Hg	Hydragyrum
Barium	B	—	Sodium	Na	—
Iron	I	Ferrum	Potassium	K	Kalium
Gold	Au	Aurum	Tin	Sn	Stannum
Silver	Ag	Argentum	Uranium	U	—
Tungsten	W	Wolfram (German name)	Zinc	Zn	—
Lithium	Li	—	Magnesium	Mn	—

Significance of Symbol of an Element

The symbol of an element signifies

1. The name of the element.
2. An atom of the element.

For example- The symbol N stands for,

1. The element nitrogen.
2. An atom of the element nitrogen.

Atomic Mass

- Earlier, hydrogen was taken as a standard for measuring the atomic masses of elements.
- Later, carbon-12 isotope was chosen as a standard for measuring the atomic masses of elements.
- Similarly, the relative atomic mass of the atom of an element is defined as the average mass of the atom, as compared to $_{12}^1$ th the mass of one carbon-12 atom.
- The masses of all other atoms are determined relative to the mass of an atom of carbon-12 as the standard.
- Carbon-12 atom has been assigned an atomic mass of exactly 12 atomic mass units, abbreviated as amu, i.e. 12 amu. Recently, the unit of atomic mass, **amu** was replaced by **u**, meaning **unified mass**.
- Now, since carbon-12 atom has been assigned an atomic mass of 12 amu, therefore, the atomic mass unit should be equal to $\frac{1}{12}$ th (one twelfth) of the mass of a carbon-12 atom.
- 1 atomic mass unit (amu) or 1 u = $\frac{1}{12}$ th the mass of carbon-12 atom

Definition of the atomic mass unit (amu or u):

One atomic mass unit is a mass unit equal to exactly one twelfth $\frac{1}{12}$ th the mass of one atom of carbon-12.
