

Many elements exist in nature in multiple isotopic forms.

Natural abundance=% of isotope found in nature

Periodic Table:

Rows=horizontal

Groups=vertically

Chemistry of elements in a group is similar.

Farthest group is not reactive

Metals-good electrical conductors

Nonmetal- insulators

Chapter 6:

Nomenclature applies to naming the smallest composition unit of a substance, which has all the properties of a substance

O₂, N₂, F₂, Cl₂, Br₂, I₂ are examples of what are called the diatomic molecules.

Not diatomic molecules are: S₈, C₆₀, P₄

Diatomic molecules are found in nature.

Nonmetal simplest compounds are called binary compounds.

Example: CO CO₂

A binary compound contains only 2 elements. There may be more than 2 atoms of each element.

Example: H₂O & H₂O₂

Binary covalent compound is formed when 2 atoms of 2 nonmetallic elements share 1 or more electron pairs to reach the octet configuration in the s and p sublevels of the valence shell.

The 1st element named is the one farthest from F on periodic table. Then name the second.

The name of the last element gets its suffix changed to -ide

Example: Compounds of C and O

Carbon monoxide CO

Carbon dioxide CO₂

Nitrogen monoxide NO

Dihydrogen monoxide H_2O
Nitrogen dioxide NO_2

SO_3 does not equal SO_3^{2-}

Monatomic Ions:

Elements whose atoms form single atom ions are called Monatomic Ions.

Example: Na^+ , Mg^{2+} , Cl^- , Fe^{3+} , O^{2-}

+ Cation

- Anion

The charge on an ion is called its oxidation state or oxidation number

Remember total charge of complete molecule must be zero