

Compounds

- Two or more elements combined in a molecule
- Properties differ from those of component elements

Ionic Compounds

- Solids composed of positive and negative Ions
- Ions arise through e^- transfer from metals to nonmetals

Covalent Compounds

- Often consists of separate molecules
- Atoms (usually nonmetals) bonded by sharing e^- pairs (e^- Orbitals)

MATTER

Anything that has mass and volume exists in three physical states: solid, liquid, gas

MIXTURES

- Two or more elements or compounds mixed in various proportions
- Components retain their properties

The classification of matter from a chemical point of view.

Mixtures are separated physically into elements and compounds. Chemical reactions are required to convert elements into compounds, and vice versa.

Heterogeneous Mixtures
Visible parts

Homogeneous Mixtures
No visible parts

Pure Substances

Elements

- Composed of one type of atom
- Smallest type of matter that has characteristic properties

Atoms

- Protons (p^+) and Neutrons (n) are located in a tiny, dense, positive nucleus: number of p^+ = atomic number ???
- Electrons (e^-) occupy surrounding volume: number of p^+ = number of e^-

Physical Separation

Methods

Filtration, Distillation, etc.

Chemical Reactions