

Element pg. 44

Define: a pure substance made of only 1 kind of atom

Notes:

- Pure matter } only 1 kind of atom
- Cannot be broken down by physical or chemical means
- Identified by chemical and physical properties

Element = pure matter
* only one type of atom

- Some exists as molecules like O_2 , I_2 , N_3

* molecule - 2 or more atoms chemically bonded

- Nomenclature (naming system):
- Na, O, Pb
- Called symbols

* only one capital letter in each symbol

Examples:
Na = Sodium
O = oxygen
Pb = Lead

Compound pg. 45

Define: a substance made of 2 or more elements chemically bonded in a specific combination (set ratio)
* 2 or more different kinds of atoms

Notes:

- Need chemical reaction to form or be broken down
- Identified by new properties that are different from the original elements
- Needs a set ratio
 $H_2O = 2$ hydrogen atoms for every 1 oxygen atom

- Many found as molecules that act as a unit
- chemical bonds hold or join atoms

- Nomenclature: CO_2 , H_2SO_4 , H_2O

Called formula
* more than one capital letter in each

Examples:
 CO_2 = Carbon dioxide
 H_2SO_4 = Sulfuric acid
 H_2O = Water

Mixture pg. 52

Define: matter that can vary in composition
* 2 or more substances that are mixed but NOT chemically combined or joined

Notes:

- No chemical reaction needed to separate or combine
- Identified without a set ratio (* specific combination)
* each substance retains own unique properties

2 Types:

① Heterogenous
* Substances not equally mixed

Ex: trail mix

② Homogenous
* Substances equally mixed

Ex: Milk

- No bonds hold/join matter together

• Nomenclature: air, dirt, you

Examples:
Air = (N_2 , O_2 , CO_2 , H_2O , CO ...)

Kinds

Of

Matter