

Pure Substances *and* Mixtures

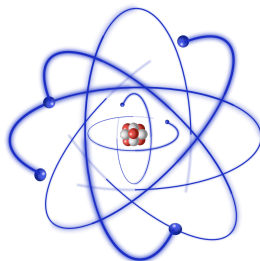


Pure Substances

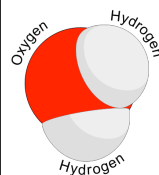
- * Made of one type of particle
- * Look the same throughout
- * Ex. Gold, CO₂, Sugar, Distilled Water



Elements



- * Pure substance
- * Contains a single type of atom
- * Cannot be separated into other substances
- * Symbol: first letter capitalized, second letter lowercase - Ca, Na, Ir, O




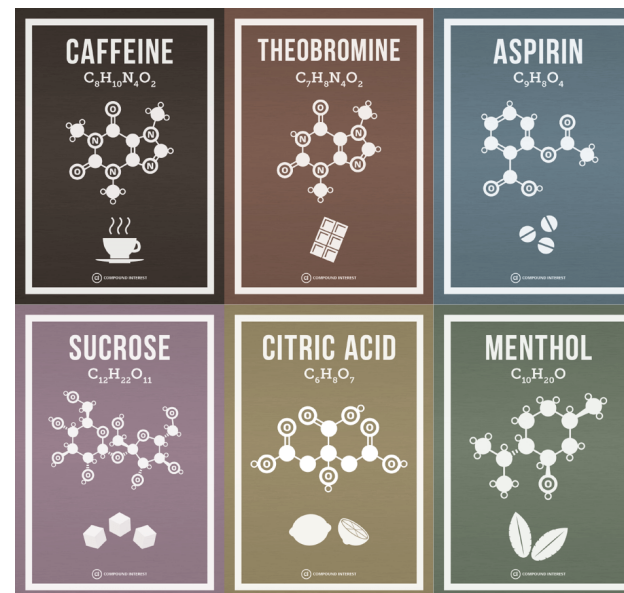
Compounds

- * Two or more elements combine chemically to form compounds
- * Ex. water molecules & chalk
- * Water is a compound because it is made of two atoms of hydrogen and one atom of oxygen



Properties of Compounds

- * Can be different from the properties of the elements that make them up
- * Ex. water molecule 
- * All compounds are molecules, but not all molecules are compounds. Ex. O₂



Chemical Formulas

- * Used to show the different elements that make up a compound
- * Letter tells you what elements are in the compound
- * Number tells you how many atoms of that element has in the compound

Chemical Formulas

- * CaCO₃ - calcium carbonate
- * NH₃ - ammonia
- * C₈H₁₀N₄O₂ - caffeine
- * CH₄ - methane

Mixtures

- * Made of two or more kinds of particles
- * Can be separated by physical means



Two Types of Mixtures

- * Homogeneous - the same throughout
- * Heterogeneous - different visible parts



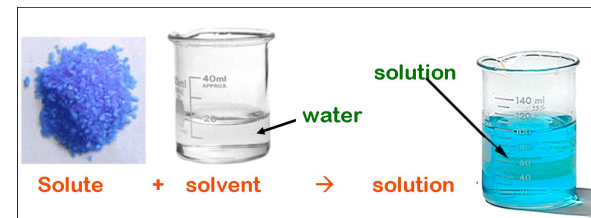
Homogeneous

- * Also called solutions - a substance is dissolved in another substance
- * The same throughout - no "chunks"
- * Often transparent
- * Ex. salt water, air



Solutions

- * Solvent: the substance that a solute is dissolved into - ex. nail polish remover
- * Solute: the substance that gets dissolved into the solvent - ex. nail polish



Heterogeneous

- * Have different parts that you can see
- * Are not transparent
- * Ex. granola bar, fruit salad

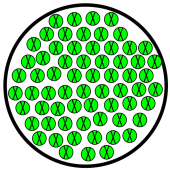


A Mixture of Mixtures

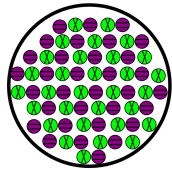
- * **MILK** is BOTH homogeneous and heterogeneous because it has visible "blobs" of fat, but it also has minerals, sugar, and vitamins dissolved in it.



Pure Substances

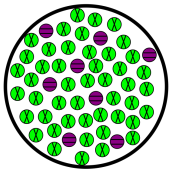


Element

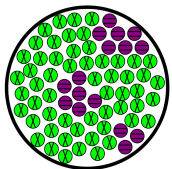


Compound

Mixtures



Homogeneous



Heterogeneous