

Pure Substances –

Constant defined composition and cannot be separated into simpler substances by physical means. There are two types of Pure Substances:

Elements – Are pure substances made out of only one kind of atom. The periodic table contains all the known elements.

Compounds – Pure substances that are made of two or more different atoms. These substances follow the law of **constant composition**. That means that there is a set ratio of each atom in the compound to every other atom in the compound (i.e. H_2O). These substances can be broken down by chemical means into the atoms that make them up. However, they cannot be separated by physical means.

Mixtures –

These substances are made up of more than one element and / or compound. Different mixtures can be almost any proportion of one element or compound to another.

Salt water is a good example of a mixture. You could have 15% NaCl and 85% H_2O , while another mixture could have 70% NaCl and 30% H_2O . The two types of mixtures are:

Homogeneous mixtures – There is the same composition of elements and / or compounds everywhere. So, homogeneous mixtures are exactly the same everywhere. When a substance dissolves in water (like salt water) it will be homogeneous.

Heterogeneous mixtures – Substances in heterogeneous mixtures are not evenly distributed. Try to visualize sand and rocks in water. The sand and rocks will be at the bottom, while the water will be above. The sand will tend to settle under the rocks and between them.