

The Classification of Matter

Matter is anything that occupies space and has mass.

Matter can be classified as a **pure substance** or a **mixture**.

1) Pure Substances: This type of matter consists of only one type of particle and has uniform properties (colour, density, melting point, boiling point). The 2 types of pure substances are **elements** and **compounds**. Elements can be found on the periodic table, and compounds are made up of combinations of elements.

I) **Elements:** sodium (Na); iron (Fe); mercury (Hg); gold (Au)

II) **Compounds:** NaCl (salt); C₁₂H₂₂O₁₁ (sugar), rust (Fe₂O₃)

2) Mixtures: This type of matter is made up of combinations of different types of particles.

I) **Solutions** are **homogeneous** mixtures of tiny, invisible particles that are uniformly distributed. Solutions can be transparent, but some solutions, such as solutions of metals, are not. An example is salt (NaCl) dissolved in water (H₂O).

II) **Mechanical mixtures** are **heterogeneous** mixtures of different particles. They have two distinct parts and are called **heterogeneous** mixtures. There are 3 types:

- a) Ordinary Mechanical Mixtures
- b) Suspensions
- c) Colloids

The Classification of Matter

