

## CHAPTER – 2, IS MATTER AROUND US PURE?

### Substance

A substance is a kind of matter that cannot be separated into other kind of matter by any physical process. A pure substance is made up of same kind of elements.

### Types of pure substances

It can be classified as element or compounds.

### Elements

An element is defined as a pure substance which made up of only one kind of atoms. Ex- oxygen (O<sub>2</sub>)

- Elements can be normally divided into metals, non-metals and metalloids.

S.NO.	metals	Non metals	metalloids
1.	Lustrous(shine)	Non-lustrous	Metalloids have Intermediate properties between metals and non-metals.
2.	Malleable, ductile	Non-malleable, non-ductile	
3.	sonorous	Non-sonorous	
4.	Good conductors of heat & electricity	Bad conductors etc.	
5.	Ex- Gold, iron etc.	Ex- Oxygen, phosphorus etc.	Ex - boron, germanium etc.

### Compound

A compound is a pure substance made up of two or more element chemical combined in a fixed proportion by mass.

Example - water (H<sub>2</sub>O), common salt (NaCl)

<b>mixture</b>	<b>compounds</b>
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<ol style="list-style-type: none"> <li>1. Elements or compounds just mix together to form a mixture and no new compound is formed.</li> <li>2. A mixture shows the properties of the constituent substances.</li> <li>3. The constituents can be separated Fairly easily by physical methods.</li> </ol>	<ol style="list-style-type: none"> <li>1. Elements react to form new compounds.</li> <li>2. The new substance has totally different properties.</li> <li>3. The constituents can be separated only by chemical or electrochemical reactions.</li> </ol>
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## Mixture

A mixture is a material made up of two or more substances (element or compound) are simply mixed together in any proportion.

Examples: The air is a mixture of oxygen, nitrogen, argon, carbon dioxide and water vapor.

**Types of Mixture:** Mixture is of two types:

- i. Homogenous mixture
- ii. Heterogeneous mixture

### Homogenous Mixture

It has no visible boundaries of separation between the various constituents, so they are called homogenous mixtures.

*Example:* Sugar in water. It has a uniform composition throughout its mass.

### Heterogeneous Mixture

These types of mixtures have visible boundaries of separation between the various constituents.

*Example:* Mixture of sugar and sand. It does not have a uniform composition throughout its mass.

## Solution

A solution is a homogenous mixture of two or more substances.

Example - Nimboopani, soda water.

- A solution has a solvent and a solute as its components. The component of the solution that dissolves the other component in it is called the solvent. The component of the solution that is dissolved in the solvent is called the solute.

