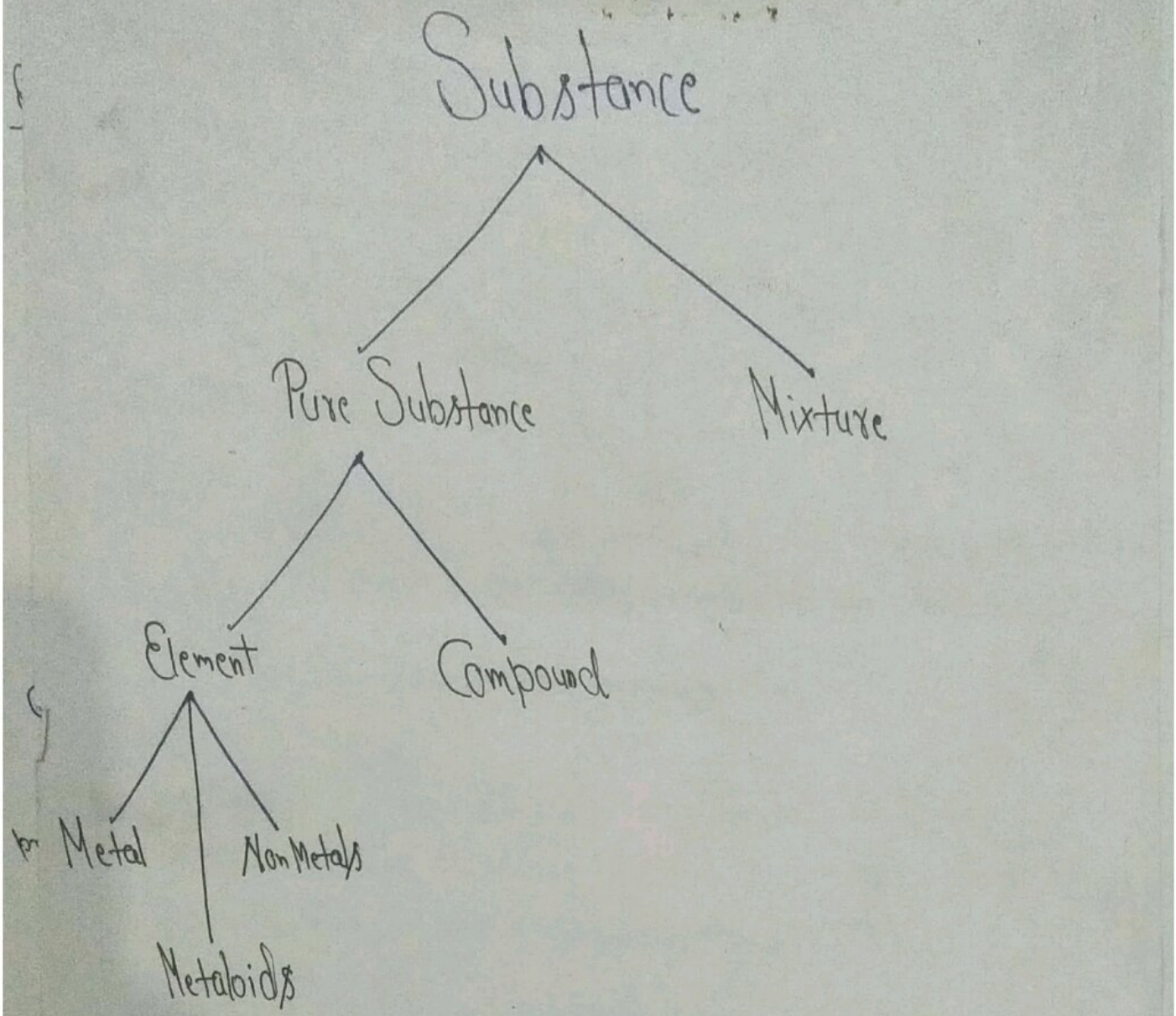
Is Matter Around Us Pure



Pure Substance

1. It Consist of a Single type of Substance
2. It Cannot be Seprated into other Substance by Physical Methods.
3. Pure Substance has its own definite properties
   Ex- Na, Cl_2, K, $CaCl_2$ etc

Mixture

It Consist of two or more Pure Substances.

It can be Seprated into its Component by physical Methods

It Shows the Properties of its Constituents

Ex- Sugar Solution

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Types of Mixtures - On the basis of miscibility mixture are of two types -

(a) **Homogeneous Mixture** - It is a type of mixture in which it has a uniform composition throughout.
Ex- Salt-Water Mixture

(b) **Heterogeneous Mixture** - It is a type of Mixture in where there is a non-uniform composition.
Ex- Salt and Sulphur, Salt-Water Mixture.

Metalloids - The elements which show some properties of metals and some other properties of non metals are called Metalloids.
Ex - Boron (B), Silicon (Si) and Germanium (Ge)

Compounds - A compound is a substance made up of two or more elements chemically combined in a fixed proportion by mass
Ex - In H_2O H and O combined in the ratio 1:8

Difference b/w Mixture & Compound

Mixture	Compound
It can be separated into its constituents by physical process	1. It can not be separated into its constituents by physical process.
It shows the properties of its constituents.	2. It does not shows the properties of its constituents.
The composition of Mixture is variable.	3. The composition of compound is fixed
It does not have a fix M.P and B.P	4. It has a fixed M.P and B.P

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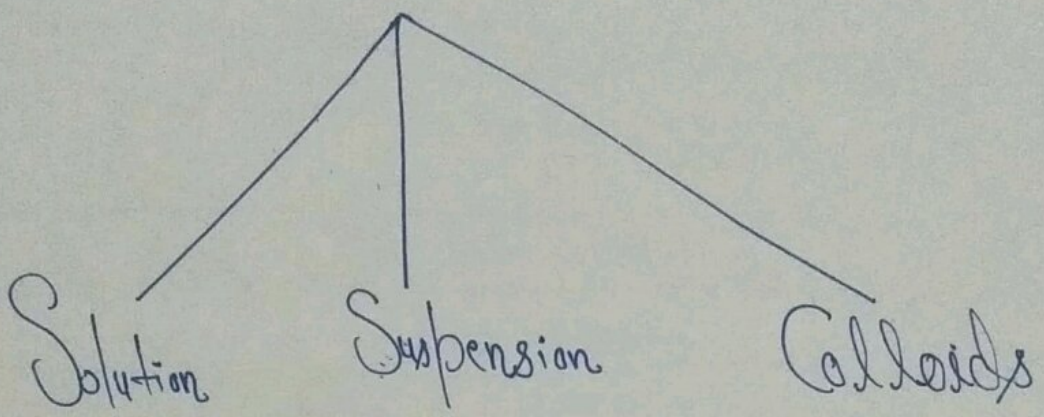
Alloy - Alloy are homogeneous mixtures of metals and cannot be separated into their component by physical Method.

Ex- Brass — Cu + Zn (Two or more metals)
Bronze — Cu + Sn
Solder — Pb + Sn



Solution - It is a homogeneous of two or more substances.

prole Ex- Salt Solution, Sugar Solution, Vinegar, Air etc

- It is homogeneous mixture.
- The size of solute particles in solution is very small.
- It does not scatter light.
- The particles of solution pass through filter paper.

Suspension - It is a heterogeneous mixture in which the small particles of solid are spread throughout a liquid without dissolving in it.

Ex- Chalk water mixture, Muddy water etc

Colloids - It is a kind of solution in which the size of solute particles is intermediate between those in true solution and those in suspension.

Ex- Soap Solution, Milk, Blood etc

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Prop. 1. It appear to be homogeneous but actually it is heterogeneous.

2. The size of solute particles is bigger than those in true soln but smaller to heterogeneous

3. Its particles scatter light.

4. Its particles pass through filter paper.

Concentration of a Solution - It is defined as the mass of solute in grams present in 100 gm of solution.

$$\text{Conc of Soln} = \frac{\text{Mass of Solute}}{\text{Mass of Solution}} \times 100$$

OR

$$\text{Conc of Soln} = \frac{\text{Volume of Solute}}{\text{Volume of Soln}} \times 100$$

Saturated And Unsaturated Solution

Saturated Solution - A solution in which no more quantity of solute can be dissolved ~~at that temp~~ at that temprature is called an saturated solution.

Unsaturated Solution - A solution in which more quantity of solute can be dissolved without raising its temprature is called an Unsaturated Solution.

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Solubility - The maximum amount of solute which can be dissolved in 100 gm of solvent at a particular temperature is known as the solubility of that solute in that solvent.

The solubility of solids in liquids usually increases on increasing the temperature and decreases on decreasing the temperature.

Physical And Chemical Changes

Physical Changes - Those changes in which no new substance are formed, are called physical changes.

Ex- Melting of ice, freezing of water, etc

(Physical changes are temporary changes)

Chemical Changes - Those changes in which new substances are formed, are called chemical changes.

Ex- Burning of candle, Rusting of iron etc.

(Chemical changes are permanent changes)

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