CHAPTER

THE AMAZING WORLD OF SOLUTES, SOLVENTS, SOLUTIONS AND MIXTURES

What is mixture?

A mixture is a substance formed by physically mixing of two or more substances in any proportion.

- No new substance is formed
- Components retain their own properties
- Components can be separated by physical methods.

Examples:

Sand and water

Types of mixtures

1. Homogeneous Mixture(Uniform mixture)
   A homogeneous mixture has a uniform composition throughout and its components cannot be seen separately
   Example: Salt Solution

2. Heterogeneous Mixture (Non uniform mixture)
   A heterogeneous mixture has a non -uniform composition and its components can be seen separately.
   Example: Oil and Water

What is solution?

A solution is a homogenous mixture. It is formed when solute dissolves in a solvent.

Example: Salt dissolved in water

What is solute ?

The substance that dissolves in a solvent is called solute

Example : Salt in salt solution

What is solvent ?

The substance in which the solute dissolves is called solvent.

Example :Water

Properties of solution

- It is homogeneous
- Solute particles are very small
- Solute cannot be separated by filtration
- Solution is stable

What is concentration of a solution?

Concentration tells the amount of a solute present in a given amount of solvent

What is saturated solution?

A solution in which no more solute can dissolve at a given temperature is called a saturated solution

Example: Salt water in which the salt does not dissolve further

What is unsaturated solution?

A solution in which more solute can still dissolve is called unsaturated solution

Effects of temperature on solubility?

- Solubility of solids increase with increase in temperature
- Solubility of gases decreases with increase in temperature
- Examples: Sugar dissolves faster in hot water
- Cold water contains more dissolved gases

What is density?

Density is the mass of a substance per unit volume

FORMULA: Density = Mass/ Volume

SI Unit = kg/m3

What is relative density?

Relative density is the ratio of density of a substance to density of water

FORMULA : Relative Density= Density of substance/ Density of water

Why do objects float or sink?

Objects float if their density is less than that of water

Objects sinks if their density is more than that of water

Example : Ice floats on water

Stone sinks in water

Effects of temperature on density

Density decreases on heating

Density increases on cooling

Example: Hot air balloon rises

Effects of pressure on density

Pressure affects gases the most

Liquids are slightly affected

Solids are almost unaffected

MAKE SURE TO STUDY THE PROBLEMS ON DENSITY AND RELATIVE DENSITY FROM THE EXAMPLE WHICH I MADE YOU WORK DURING THE CLASS

MAKE SURE TO REFER THE TEXTBOOK TOO THIS NOTES IS ONLY FOR THE PURPOSE OF REFERENCE

ALL THE BEST DO WELL