

Science Chapter 3.5 Notes

What is a solution?

- A solution is a mixture in which one substance dissolves completely in another substance.
- The substance that dissolves is called the solute.
- The substance in which the solute dissolves is called the solvent.
- In a solution, the particles of the solute can no longer be seen.

Types of Solutions

- Dilute → A low percentage of solute is dissolved in a fixed volume of water.
- Concentrated → A high percentage of solute is dissolved in a fixed volume of water.

Tests to Check If a Mixture Is a Solution

- Shine light through the mixture. If it is a solution, light would pass through completely.
- Filter the mixture. If it is a solution, no residue will be left in the filter paper.
- Let the mixture settle. If it is a solution, there will not be solid deposits formed at the bottom of the mixture.

What is the Rate of Dissolving

- The rate of dissolving refers to how quickly a solute dissolves in a solvent.

Factors Affecting the Rate of Dissolving

- Size of the solute particles → Smaller pieces of the solute have a larger surface area in contact with the solvent. This speeds up the

rate of dissolving.

- **Temperature** → The higher the temperature of the solution, the higher the rate of dissolving. The solute and the solvent particles have more energy so they can move faster and mix more quickly.
- **Rate of stirring** → The higher the rate of stirring, the higher the rate of dissolving. Stirring helps the solute particles to enter the spaces between the solvent particles more quickly.

Solubility

- **Solubility of a solute** is a measure of the maximum amount of solute that can be dissolved in a fixed volume of solvent at a fixed temperature.

Factors affecting Solubility

- **Type of solute** → Different solutes have different solubilities in the same solvent.
- **Type of solvent** → The same solute has different solubilities in different solvents.