Chemistry 8: Chemical Analysis

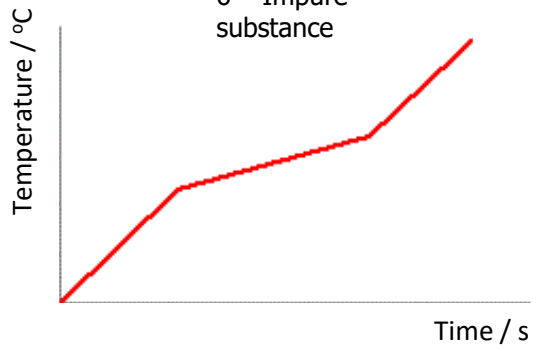
Section 1: Key terms

1 Pure	A pure substance is a single **element** or **compound**, **not mixed** with any other substance.
2 Formulation	A **mixture** that has been designed as a useful product. Formulations are made by mixing the components in **carefully measured quantities**. Formulations include **fuels**, **cleaning agents**, **paints**, **medicines**, **alloys**, **fertilisers** and **foods**.
3 Melting point	The **temperature** at which a substance turns from a solid to a liquid.

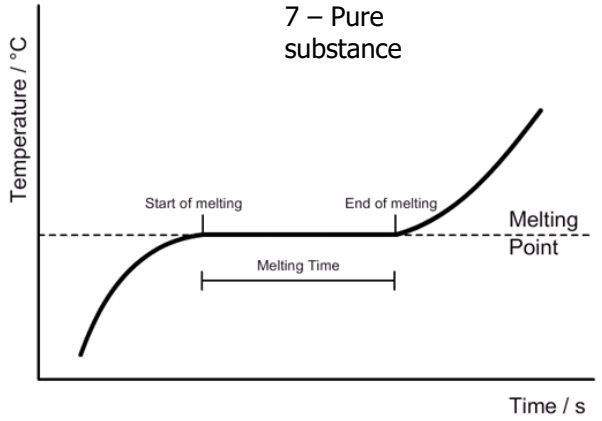
Section 2: Impure and Pure Graphs

4	Impure substances do not melt at specific temperatures.
5	Pure substances do melt at specific temperatures (a horizontal line is produced).

6 – Impure substance

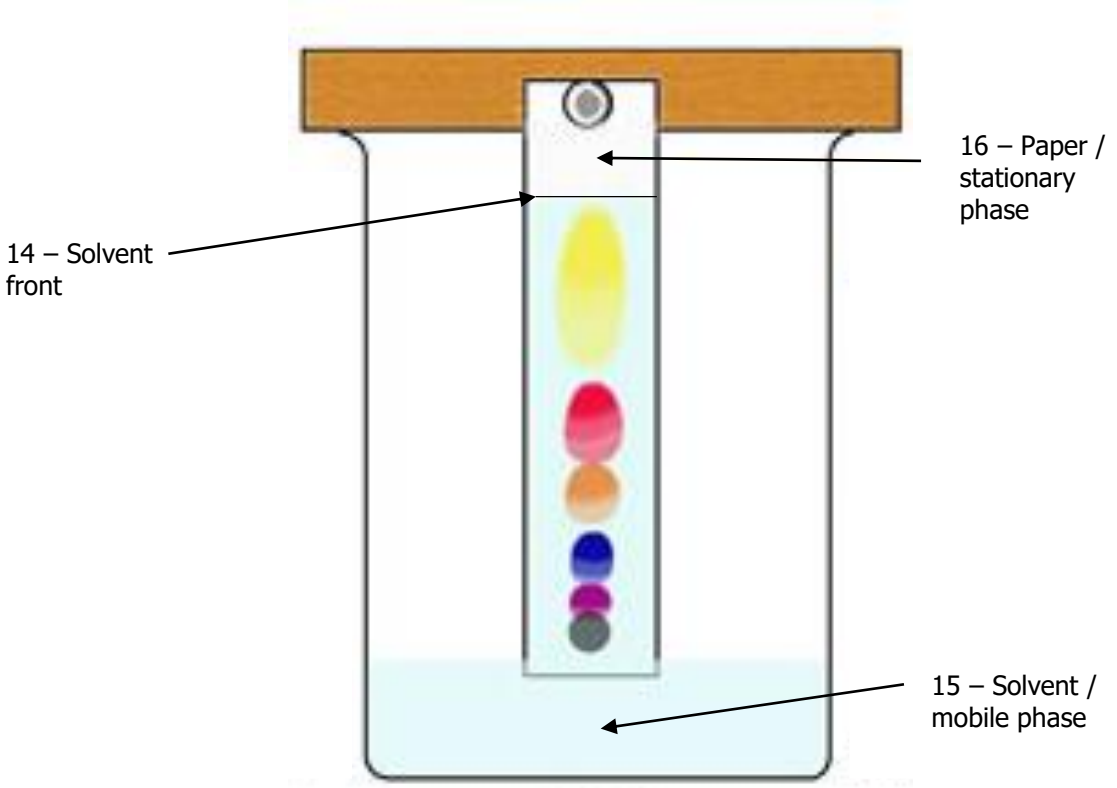


7 – Pure substance



Section 3: Chromatography

8 Chromatography	A method used to **separate mixtures** into their different chemicals.
9 Solvent	The chemical that **dissolves the sample** in chromatography.
10 Solvent front	The **maximum distance** the **solvent moves** up the paper.
11 Stationary phase	The **medium** (e.g. paper) through which the **mobile phase passes** in **chromatography**.
12 Mobile phase	The **solvent** (e.g. water) that carries the sample (e.g. ink) in **chromatography**.
13 R_f value	A value (always less than 1) that shows how far the substance has moved compared to the solvent. Equation: R_f = distance moved by substance / distance moved by solvent



Section 4: Testing for Gases

	Gas	Procedure	Positive Result
17	Hydrogen	Hold a **lit splint** at the end of a test tube producing gas.	Hydrogen burns with a **pop** noise.
18	Oxygen	Hold a **glowing splint** in a test tube of the gas.	The splint **relights** if oxygen is present.
19	Carbon dioxide	Bubble gas through a solution of **limewater**.	Carbon dioxide causes the limewater to turn **milky**.
20	Chlorine	Place **damp litmus paper** in the gas.	The litmus is **bleached white** if chlorine is present.