

C2.1.3 Pure and Impure Substances

Learning objectives

- Explain what pure means
- Explain what a mixture is
- Use melting point data to determine whether a substance is pure or impure

Definitions

- Pure means it contains only one element or compound
 - Element – all atoms are identical
 - Compound – contains more than one type of atom and they are chemically joined together
- A mixture is impure
 - It contains more than one element or compound

Using the melting point to determine purity

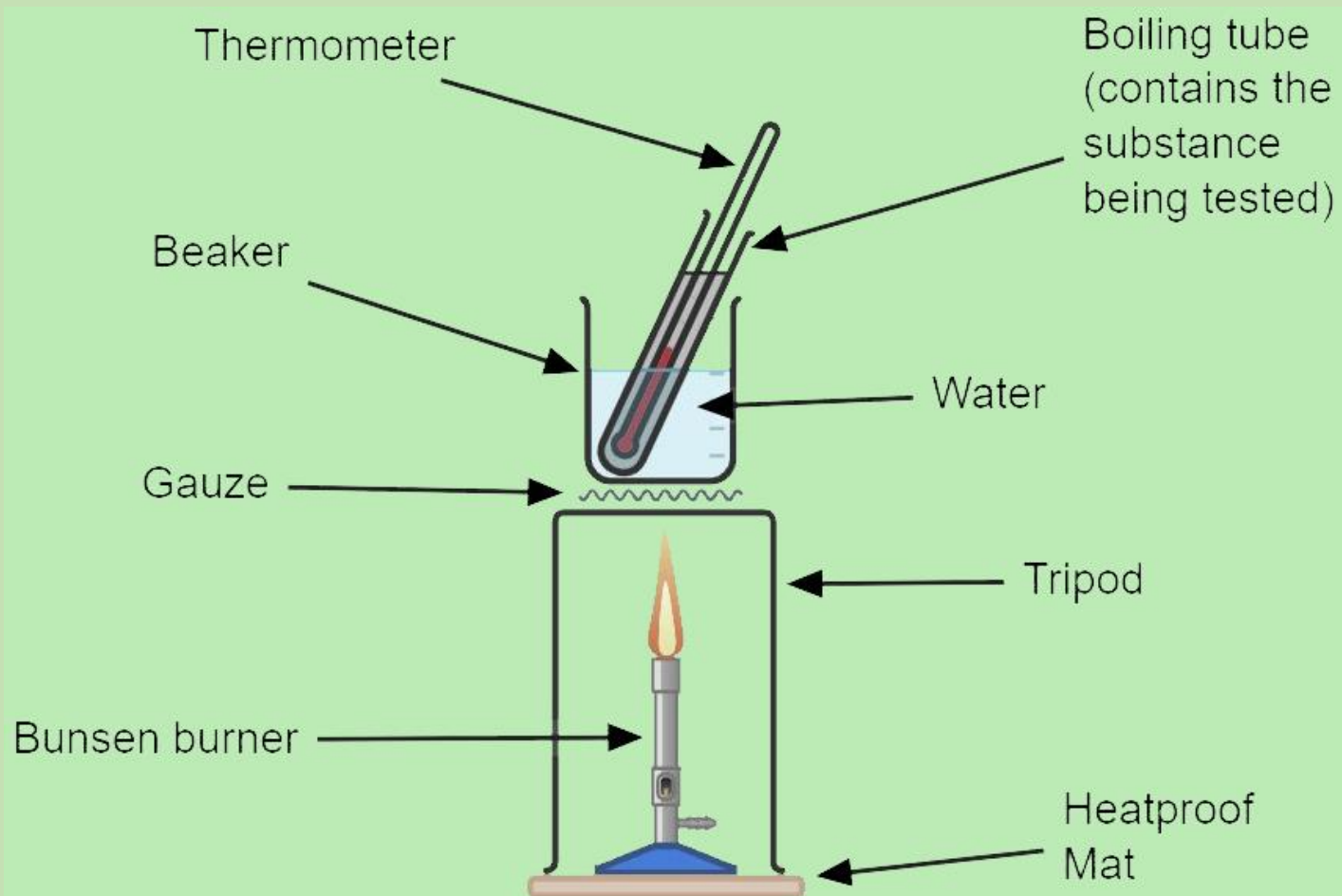
- Impurities
 - **Lower** the melting point
 - **Broaden** the range over which melting occurs

When measuring melting points it is important to

- Heat the substance slowly
 - So that the whole of the sample increases in temperature
- Stir it as it melts
 - So that all of the sample is at the same temperature

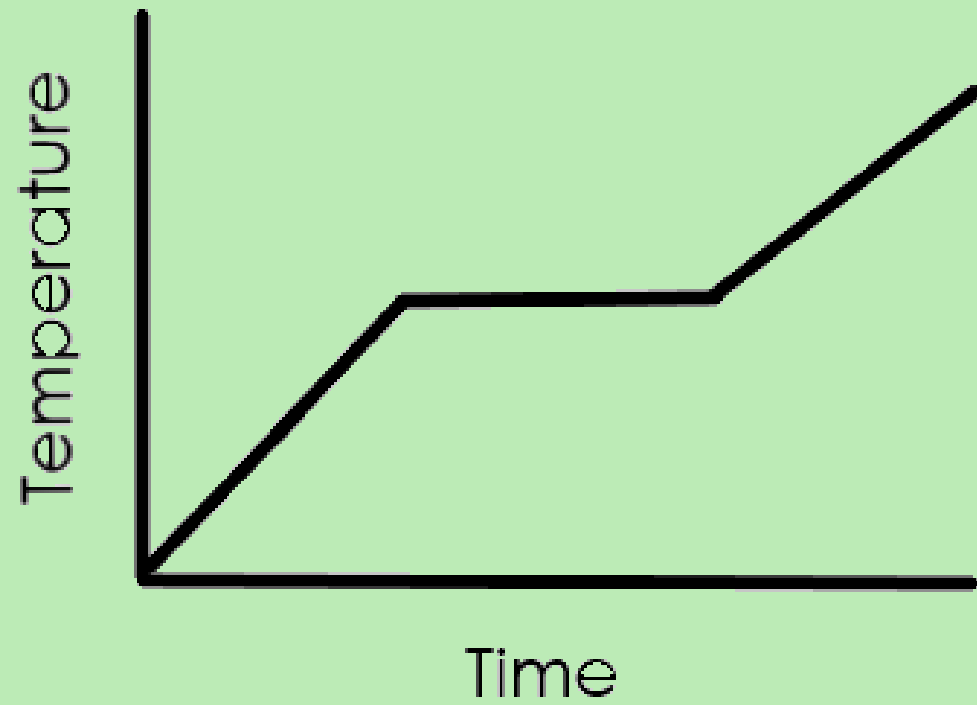
Experimental method

1. Set up the equipment as shown in the diagram to the left
2. Start the timer
3. Light the bunsen burner and turn to the blue flame
4. Record the temperature every 20 seconds



Expected results

Pure chemical



Impure Chemical
(Lower, broader)

