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National 5 Assignment
Cooling Curve: Guide A



**Investigating the cooling curves for different liquids.**

**Apparatus**

Boiling tube containing stearic acid, boiling tube containing water, beaker,

2 thermometers, stopclock, test tube rack and water bath.

**Background**

According to the kinetic theory, the average speed of the gas particles increases with increasing temperature. The hotter the gas, the faster the gas particles are moving and so require to take up more space.



**Instructions**

* Place the boiling tubes of water and stearic acid in a beaker of heated water or water bath until the stearic acid is completely melted.
* Place thermometers or temperature probes in the two boiling tubes, do not move or adjust them so ensure you can read the temperature. *You may wish to clamp them in place.*
* Remove the boiling tubes from the hot water and place them in a boiling tube rack, or a glass beaker.
* Measure and record the initial temperature of both materials.
* Without touching the thermometers or temperature probes, record the temperature in each boiling tube at regular time intervals.

**Risk Assessment**

* Wear safety googles when carrying out this experiment.
* The water can be hot, be careful with hot equipment and always move the hot water from the kettle to the beaker. Do not attempt to move hot beakers unless you carry them in an approved way.
* Glasswear can cause cuts, beware!
* Secure all equipment so it cannot fall.
* Do not attempt to remove the thermometers at the end of the experiment.