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**Investigation – Cooling rate and crystal Size**

**Practical Report 2019**

***Use the Practical Sheet to fill in the sections on this page front and back.***

**Aim:** (what are you going to investigate?) **(2 Marks)**

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**Hypothesis:** (describe the relationship between the dependent and independent variables

**(3 Marks)**

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**Variables: (3 Mark)**

Independent (what will be changed):

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Dependent (what will be measured):

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2 Controls (what will be kept the same):

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**Materials: (1 Marks)**- Safety glasses- Safety Mat- 2 x Test tubes- Labels for stickers- 2 x 100mL Beaker  
- 2 x Cotton wool-   
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**Diagram of experimental set up:** (Label everything) **(2 Marks)**

**Method: (2 Marks)**

1. Collect the equipment listed above.
2. Write your group members’ names on two labels then label your test tubes.
3. Put 50mL of boiling water into a 100mL beaker.
4. Measure out the 10g alum into the 100mL beaker of hot water and using the stirring rod, stir continuously until all the alum is dissolved.
5. Using the pipette, pipette approximately 1/2 the liquid into each of the test tubes.
6. Plug the test tubes with cotton wool.

7.

8.

9.

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**Results:**

Table **(4 Marks)**

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Analysis

Describe your observations (be sure to include actual results from the above table, do **NOT** explain why these happened that is for the discussion section). **(3 Marks)**

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Do your results support your hypothesis? Be sure to explain **why** your hypothesis was or was not supported.  **(2 Mark)**

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**Discussion and Conclusion:**

What did this experiment inform you about the cooling rate and the crystal size? **(2 Marks)**

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Use science ideas to explain your results/observations: **(2 marks)**

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**Evaluation: (3 Marks)**

Explain if your experiment fair?

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Explain if your results accurate?

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Explain if your results reliable?

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If you were to do this experiment again how would you change it, in order to make your results more accurate and/or gather more useful information? **(1 Mark)**

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**Total: /30**