

| **Year 11 ATAR CHEMISTRY Name:** | |
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| Task No: | 2 |
| Task Type: | Science Inquiry: Investigation |
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| Content: | Physical properties of mixtures |
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| Task Description: | *Materials are pure substances with distinct measurable properties, including melting and boiling points, reactivity, hardness and density; or mixtures with properties dependent on the identity and relative amounts of the substances that make up the mixture*.    Design and conduct an experiment to determine the effect of the relative amounts of substances in a mixture on **one** physical property.  **Plan/research at home (1 week)**  **1 lesson to complete practical (open book)**  **1 lesson to complete report (open book)** |
| Total Marks: | 25 |
| Weighting: | 6.25% |
| Due Date: |  |

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| Marking Requirement: | | Mark Allocation | Mark |
| Aim | * Aim is clear and concise | 1 |  |
| Variables | * Independent variable is numerical, incremental and includes SI units * Dependant variable is numerical and includes SI units * 5 controlled variables identified * 1-3 uncontrolled variables identified | 4 |  |
| Hypothesis | * Hypothesis relates independent and dependent variables | 1 |  |
| Equipment and Procedure | * All equipment listed, including sizes or types where appropriate * Procedure step by step, detailed and specific * Diagram/s scientific, neat, labelled, captioned and appropriately sized * Safety precautions are identified | 4 |  |
| Results | * Data presented in appropriate table * Record appropriate observations or results * Data presented in appropriate graph (4) | 6 |  |
| Discussion | * Results summarised * Generalisations made about concentration and physical property (specific to your investigation) * Explanations refer to accepted scientific theory (which may be researched) and use appropriate terminology * Identify random and systematic sources of error * Suggest specific improvements | 5 |  |
| Conclusion | * Summary of findings * Hypothesis supported/not based on data | 2 |  |
|  | * References, at least 4 in suitable format | 2 |  |
|  |  | Total /25 |  |

