**Chemistry 2.4 AS 91164** Demonstrate understanding of bonding, structure, properties and energy changes

Writing Excellence answers to **Endothermic and Exothermic** questions



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| **Endothermic and Exothermic QUESTION** | |
| **Question:**  Pentane, C5H12, is a liquid at room temperature. It evaporates at 36.1°C in an endothermic process.  (i) Explain why the evaporation of pentane is an endothermic process.  (ii) Draw, including labels, the energy diagram for the combustion of pentane, C5H12(l).  Pentane combustion: C5H12(l) + 8O2(*g*) → 5CO2(*g*) + 6H2O(l) Δr*H* º = −3509 kJ mol–1  Include in your diagram the reactants, products, and change in enthalpy. | |
| **ANSWER** | |
| 1. define an **endothermic** process |  |
| 2. For the substance (name) state the type of “solid” that it is |  |
| 3. link state change (liquid to gas) to breaking bonds requiring energy |  |
| 3. link state change to endothermic process |  |
| 4. draw **labelled diagram** including labelled axis’s, reactants HR, products HP and change in enthalpy ∆H |  |

NOTE: The white column is how your answer would appear on your test paper so make sure you **write out complete sentences**. The grey area is just to help you structure your answer and would not appear in the question.