A12.3 Enthalpy Changes

Enthalpy Changes

A12.3.1–A12.3.3

Name: _____ Date: _____

1. Definitions

1.1 Define H. 1.2 Write ΔH = ... 1.3 Why are H and ΔH not interchangeable?

2. Classification

Scenario	Type	Energy transfer	ΔH sign
Surroundings warmer			
Surroundings cooler			
Products lower H			
Products higher H			

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3. Diagrams

3.1 Sketch an exothermic profile. Label reactants, products, Ea and ΔH.

3.2 Sketch an endothermic profile with the same labels.

3.3 Where is Ea measured from? Why not from zero on the y-axis?

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4. Application

4.1 A reaction transfers 45 kJ to the surroundings. Classify it and give the ΔH sign.

4.2 Does an exothermic reaction still need Ea? Explain.

4.3 Draw a catalysed and uncatalysed pathway on one diagram. What stays the same?

5. Errors

Correct: catalyst lowers ΔH; endothermic destroys energy; ΔH must be positive; Ea measured from y = 0; catalyst lowers product enthalpy.

6. Examination-style

(a) Define ΔH [2]. (b) Exothermic diagram [2]. (c) Endothermic change [2]. (d) Catalyst effect [3].

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7. Extended

Explain conservation of energy for an endothermic reaction in terms of system and surroundings.