

Hess's Law, Formation Enthalpy, and Energy Cycles

g11_u02_w06

Original fictional paper models only; no reaction or heating is requested.

1. State Hess's law.

2. Reverse $A \rightarrow B, \Delta H = -40$ kJ.

3. Independently double the original reaction $A \rightarrow B, \Delta H = -40$ kJ (do not use the reversed equation).

4. Add $A \rightarrow B = -40$ and $B \rightarrow C = +15$ kJ.

5. Identify canceling intermediate.

6. Define standard formation enthalpy.

7. Use ΔH_f° : products -500 , reactants -320 kJ/mol.

8. State product-minus-reactant rule.

9. Why do coefficients scale ΔH ?

10. Calculate $3(-25)$ kJ.

11. Explain reference-state limit.

12. A cycle totals $+18 - 44 + 9$ kJ.

13. Reverse all steps in item 12.

14. Distinguish equation algebra from mechanism.

15. Identify a sign check.

16. State one data-table provenance need.

17. Explain why formation values need stated conditions.

18. A target value is -35 ± 2 kJ. Interpret.

19. Name a missing energy path.

20. Write a bounded Hess conclusion.
