

5 Enthalpy changes – Part 2 —Answers

Answers

Work through these after trying the questions yourself.

5.1 $q = mc \Delta T$.

5.2 $\Delta H = -q/n = -5000/0.10 = -50000 \text{ J mol}^{-1} = -50 \text{ kJ mol}^{-1}$.

5.3 $q = mc \Delta T = 200 \times 4.18 \times 10 = 8360 \text{ J (8.36 kJ)}$.

5.4 The total enthalpy change of a reaction is the same whatever route is taken from reactants to products.

5.5 It lets you find an enthalpy change that cannot be measured directly (from values that can).

5.6 $q = mc \Delta T = 200 \times 4.18 \times 20 = 16720 \text{ J}$; $n = 0.32/16 = 0.020 \text{ mol}$; $\Delta H = -q/n = -16720/0.020 = -8.36 \times 10^5 \text{ J mol}^{-1} = -836 \text{ kJ mol}^{-1}$.