

Solutions

2.1 A Use energy transferred = mass $\times$ specific heat capacity $\times$ temperature change. Convert joules to kilojoules before dividing by reaction amount. An exothermic molar enthalpy change has a negative sign.

2.2 $q = mc\Delta T = (50 \text{ g}) \times (4.2 \text{ J/(g K)}) \times (4 \text{ K}) = 840 \text{ J}$.

2.3 False. Heat loss usually lowers the observed temperature rise. The solution gaining heat and the reaction losing heat have opposite signs.

2.4 exothermic. exothermic means Transferring energy to the surroundings.

3.1 $\Delta H = -q/n = -1.5/0.030 = -50 \text{ kJ/mol}$. Solution gains heat, reaction loses it. Uncorrected loss usually underestimates magnitude. Include container heat if relevant.