

$$7. \quad 75.0 \text{ mL} = 0.075 \text{ L} \times \frac{6.67 \text{ mol}}{\text{L}} \text{ HCl} \\ = 0.50025 \text{ mol HCl}$$

$$m = 75.0 \text{ g} + 75.0 \text{ g} = 150.0 \text{ g}$$

$$\Delta T = 39.6^\circ \text{C}$$

$$\Delta H = \frac{m \times c \times T}{\text{mol}} \\ = \frac{150 \text{ g} \times 4.18 \text{ J/g}^\circ \text{C} \times 39.6^\circ \text{C}}{0.500 \text{ mol HCl}}$$

$$= 49658.4 \text{ J/mol}$$

$$= 49.7 \text{ kJ/mol}$$

