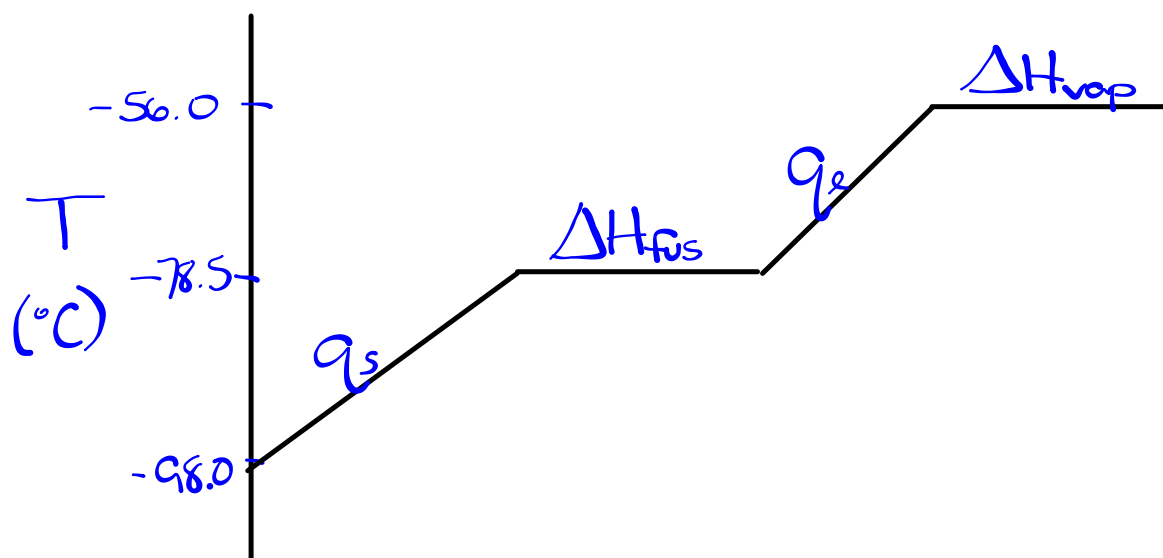
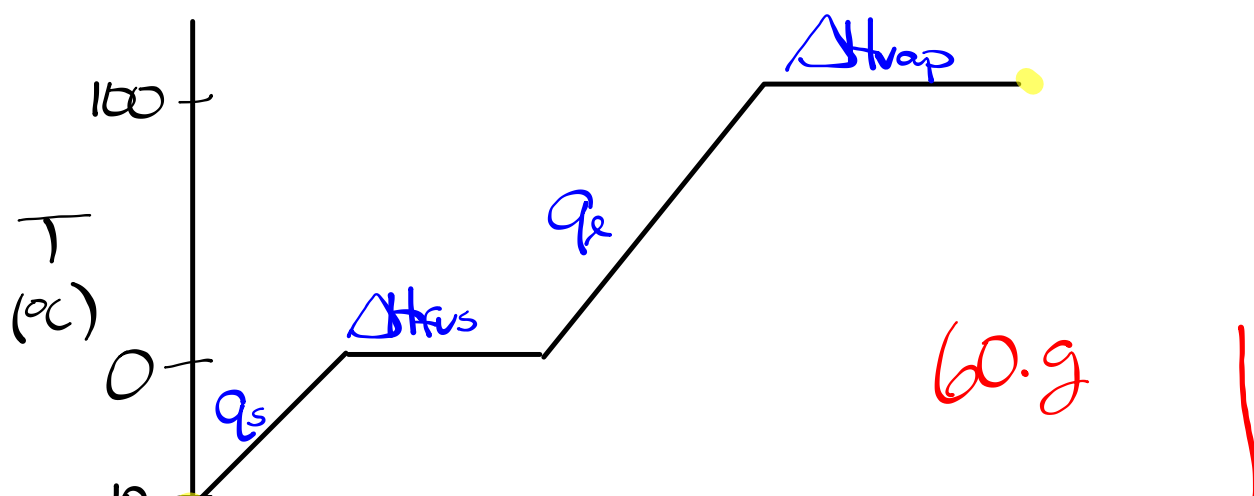


Warm Up

Solid carbon dioxide, at a temperature of $-98.0\text{ }^{\circ}\text{C}$ is heated until it becomes a gas at it's boiling point ($-56.0\text{ }^{\circ}\text{C}$). Draw the heating curve. The melting point is $-78.5\text{ }^{\circ}\text{C}$.



Homework - Worksheet



$$\Delta E_T = q_s + \Delta H_{fus} + q_e + \Delta H_{vap}$$

$$\Delta E_T = (1.206 \text{ kJ}) + (20.0777 \text{ kJ}) + (25.140 \text{ kJ}) + (135.849 \text{ kJ})$$

$$\Delta E_T = 182 \text{ kJ}$$

$$q_s = mC\Delta T$$

$$q_s = (60.0 \text{ g}) \left(2.01 \frac{\text{J}}{\text{g} \cdot ^\circ\text{C}} \right) (10.0^\circ\text{C})$$

$$q_s = 1206 \text{ J}$$

$$\Delta H_{fus} = nH_{fus}$$

$$\Delta H_{fus} = \left(\frac{60.0 \text{ g}}{18.02 \text{ g/mol}} \right) \left(6.03 \frac{\text{kJ}}{\text{mol}} \right)$$

$$\Delta H_{fus} = 20.0777 \text{ kJ}$$

$$q_e = mC\Delta T$$

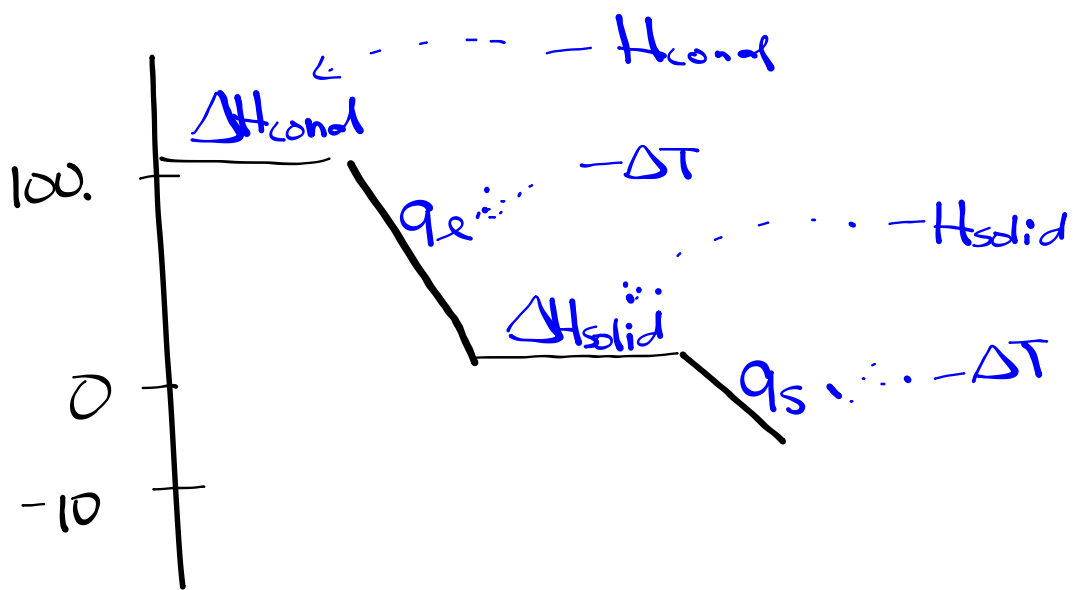
$$q_e = (60.0 \text{ g}) \left(4.19 \frac{\text{J}}{\text{g} \cdot ^\circ\text{C}} \right) (100.0^\circ\text{C})$$

$$q_e = 25140 \text{ J}$$

$$\Delta H_{vap} = nH_{vap}$$

$$\Delta H_{vap} = \left(\frac{60.0 \text{ g}}{18.02 \text{ g/mol}} \right) \left(40.8 \frac{\text{kJ}}{\text{mol}} \right)$$

$$\Delta H_{vap} = 135.849 \text{ kJ}$$



Total Energy Changes

Worksheet 55