

HEAT SUMMATION 5



$$-273.65 \text{ kcal} \times \frac{4.184 \text{ kJ}}{1 \text{ kcal}} = -1145.0 \text{ kJ}$$

$$-281.86 \text{ kcal} \times \frac{4.184 \text{ kJ}}{1 \text{ kcal}} = -1179.3 \text{ kJ}$$

$$-820.98 \text{ kcal} \times \frac{4.184 \text{ kJ}}{1 \text{ kcal}} = -3435.0 \text{ kJ}$$

$$\Delta H^\circ = [\Delta H^\circ_{\text{Al}_2(\text{SO}_4)_3(\text{s})} + 6\Delta H^\circ_{\text{NH}_4\text{NO}_3(\text{s})}] - [2\Delta H^\circ_{\text{Al}_2(\text{NO}_3)_3(\text{aq})} + 3\Delta H^\circ_{(\text{NH}_4)_2\text{SO}_4(\text{aq})}]$$

$$\Delta H^\circ = [(-3435.0 \text{ kJ}) + 6(-365.6 \text{ kJ})] - [2(-1145.0 \text{ kJ}) + 3(-1179.3 \text{ kJ})]$$

$$\Delta H^\circ = +199.8 \text{ kJ}$$

