

## HEAT SUMMATION 1

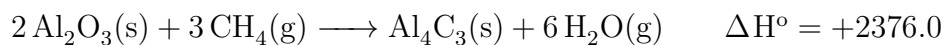


$$-30.9 \text{ kcal} \times \frac{4.184 \text{ kJ}}{1 \text{ kcal}} = -129.3 \text{ kJ}$$

$$\Delta H^\circ = [\Delta H^\circ_{\text{Al}_4\text{C}_3(\text{s})} + 6\Delta H^\circ_{\text{H}_2\text{O}(\text{g})}] - [2\Delta H^\circ_{\text{Al}_2\text{O}_3(\text{s})} + 3\Delta H^\circ_{\text{CH}_4(\text{g})}]$$

$$\Delta H^\circ = [(-129.3 \text{ kJ}) + 6(-241.8 \text{ kJ})] - [2(-1866.44 \text{ kJ}) + 3(-74.4 \text{ kJ})]$$

$$\Delta H^\circ = +2376.0 \text{ kJ}$$



Please note that the  $\Delta H$  value for water should be  $-241.8 \text{ kJ}$  because water is in the gas state in this question.