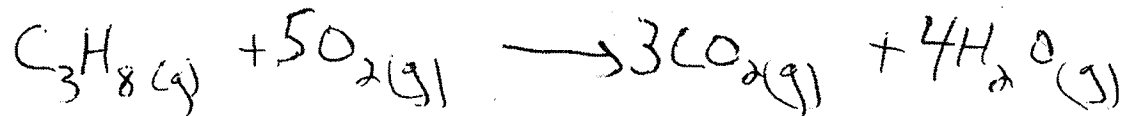


8. Determine the standard molar enthalpy of combustion of propane that is burned in a barbeque.

[2]



$$\Delta_c H_m^\circ = \sum n \cdot \Delta_{\text{fp}} H_m^\circ - \sum n \cdot \Delta_{\text{fr}} H_m^\circ$$

$\text{C}_3\text{H}_8(\text{g})$

$$= 3 \text{ mol} \cdot -393.5 \frac{\text{kJ}}{\text{mol}} + 4 \text{ mol} \cdot -241.8 \frac{\text{kJ}}{\text{mol}} - \left( 1 \text{ mol} \cdot -103.8 \frac{\text{kJ}}{\text{mol}} + 5 \text{ mol} \cdot 0 \frac{\text{kJ}}{\text{mol}} \right)$$

$$\Delta_c H_m^\circ = -2044 \frac{\text{kJ}}{\text{mol}}$$

2