

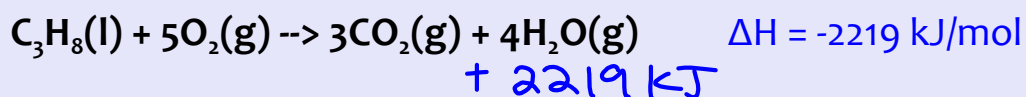
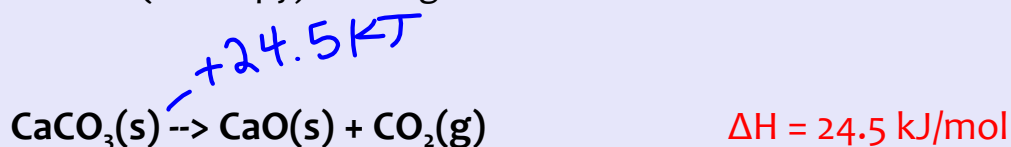
Enthalpy ΔH

- heat energy (ΔH) measured in Joules (J) or kilojoules (kJ)
- $+\Delta H$ = endothermic
- $-\Delta H$ = exothermic

Feb 8-12:46 PM

Thermochemical Equations

- A balanced chemical equation that shows the amount of heat (enthalpy) either gained or lost in the reaction.



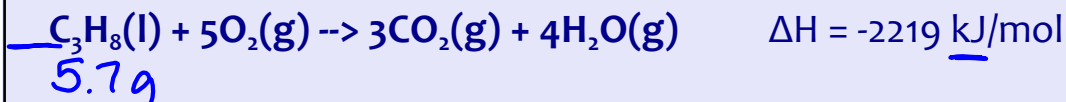
Endothermic reactions: $+\Delta H_{\text{rxn}}$ (gain energy)

Exothermic reactions: $-\Delta H_{\text{rxn}}$ (lose energy)

Feb 8-12:46 PM

Practice

How much heat is released when 5.7g of propane are burned?

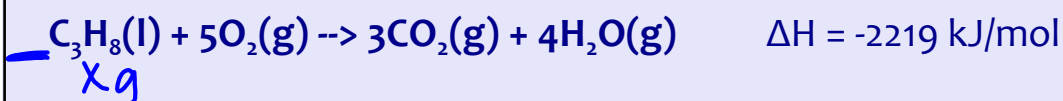


$$5.7g \text{ C}_3\text{H}_8 \times \frac{1 \text{ mol C}_3\text{H}_8}{44g \text{ C}_3\text{H}_8} \times \frac{2219 \text{ kJ}}{1 \text{ mol C}_3\text{H}_8} = \boxed{287 \text{ kJ}}$$

Feb 8-12:46 PM

Practice

How many grams of propane would be needed to produce 255 kJ of energy?



$$255 \text{ kJ} \times \frac{1 \text{ mol C}_3\text{H}_8}{2219 \text{ kJ}} \times \frac{44g \text{ C}_3\text{H}_8}{1 \text{ mol C}_3\text{H}_8} = \boxed{5.06g \text{ C}_3\text{H}_8}$$

Feb 8-12:46 PM

Practice

How many grams of carbon dioxide are made when we produce 457 kJ?



$$457 \text{ kJ} \times \frac{3 \text{ mol CO}_2}{2219 \text{ kJ}} \times \frac{44 \text{ g CO}_2}{1 \text{ mol CO}_2} = 27.2 \text{ g CO}_2$$

Feb 8-12:46 PM