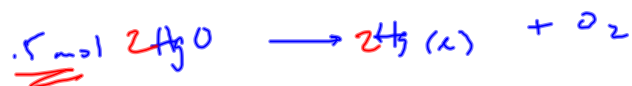


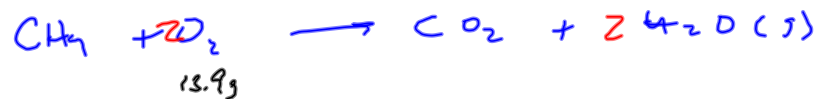
$$\begin{aligned} \Delta H_{\text{rxn}} &= [8(SO_2)] - [S_8 + 8(O_2)] \\ &= [8(-296.84)] - [0 + 8(0)] \\ &= -2374.72 \text{ kJ/mol} \end{aligned}$$

$$1g S_8 \times \frac{1 \text{ mol}}{256 \dots g} \times \frac{-2374.72 \text{ kJ}}{1 S_8} =$$



$$\begin{aligned} \Delta H_{\text{rxn}} &= [2(H_2) + O_2] - [2(H_2O)] \\ &= [2(0) + 0] - [2(-90.83)] \\ &\quad + 181.66 \text{ kJ/mol} \end{aligned}$$

$$.5 \text{ mol } H_2O \times \frac{181.66 \text{ kJ}}{2 H_2O} =$$



$$\Delta H_{\text{rxn}} = [\text{CO}_2 + 2(\text{H}_2\text{O})] - [\text{CH}_4 + 2(\text{O}_2)]$$

ΔH_{rxn}

$$13.9\text{g O}_2 \times \frac{1 \text{ mol}}{31.9988\text{g}} \times \frac{\Delta H_{\text{rxn}} \text{ kJ}}{2 \text{ O}_2} =$$




$$(-1) q_{\text{hot}} = q_{\text{cold}} + q_{\text{calorimeter}}$$

$$(-1)(110.6 \text{ g})(\downarrow 46.9 - 86.7) = \underset{\substack{\uparrow \\ \text{cold} \\ 104.9}}{m} c \Delta T + S \Delta T$$

46.9 - 14.3

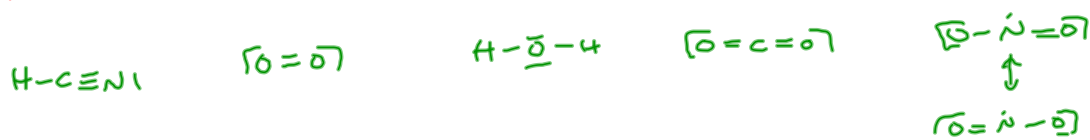
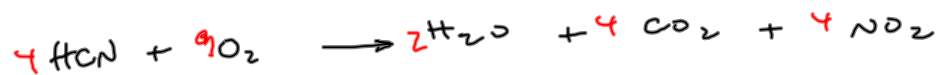
30.1 $\frac{\text{cal}}{\text{oc}}$

$$0 = m c \Delta T_{\text{cold}} + S \Delta T + m c \Delta T_{\text{hot}}$$



$q_{ice} = q_{H_2O} + q_{calorimeter}$
 $12.9 \text{ g} \cdot m \Delta T_{ice} + 12.9 \text{ g} \cdot m \Delta T = - \left[m \Delta T + S \Delta T \right]$
 Hot H₂O \uparrow $80.0 \frac{\text{cal}}{\text{g}}$ $(T_f - 0)$ \uparrow 85.9 g \uparrow $(T_f - 94.6)$ \uparrow $30.1 \frac{\text{cal}}{\text{C}}$

$\text{CaCO}_3 + 2\text{NaOH} \rightarrow \text{CaCO}_3 + \text{Na}_2\text{CO}_3$
 $\Delta H_{rxn} = P - R$
 $\left[\text{CaCO}_3 + \text{Na}_2\text{CO}_3 \right] - \left[\text{CaCO}_3 + 2(\text{NaOH}) \right]$
 $\Delta S = \frac{\text{J}}{\text{K mol}}$
 $\Delta G = \Delta H - T \Delta S$
 $\Delta G = \Delta H - T \Delta S$
 \uparrow in K



$\Delta H_{\text{rxn}} = \text{Broken} - \text{Made}$

$$\left[4(\text{C}-\text{H}) + 4(\text{C}\equiv\text{N}) + 9(\text{O}=\text{O}) \right] - \left[4(\text{O}-\text{H}) + 8(\text{C}=\text{O}) + 4(\text{N}=\text{O}) + 4(\text{N}=\text{O}) \right]$$

$$12.6 \text{g} \times \frac{1 \text{ mol}}{26 \text{ g}} \times \frac{\Delta H \text{ kJ}}{4 \text{ HCN}}$$