

⑤ ^{Mole Ratio} $2 \text{Na}_2\text{O}_2(s) + 2\text{H}_2\text{O}(l) \rightarrow 4\text{NaOH}(aq) + \text{O}_2(g) + 126 \text{ kJ}$

25g \swarrow \searrow 126 kJ
 \swarrow \searrow \swarrow \searrow
 $25\text{g Na}_2\text{O}_2$ | $1 \text{ mole H}_2\text{O}$ | 126 kJ
 $78\text{g H}_2\text{O}$ | $2 \text{ mole Na}_2\text{O}_2$ |

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① $2\text{CO}(g) + \text{O}_2(g) \rightarrow 2\text{CO}_2(g)$

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

$$[2(-393.5)] - [2(-110.5) + \text{element in element / formation}]$$

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⑧ $\frac{f \text{ mol J}}{\text{mol e}^{-2} \text{ C}}$

$\frac{2.25 \text{ J}}{\text{mol e}^{-2} \text{ C}} \times \frac{100 \text{ g C}_6\text{H}_6}{\text{mol C}_6\text{H}_6} \times \frac{1 \text{ mol C}_6\text{H}_6}{120 \text{ g C}_6\text{H}_6}$

⑨ $c = f \lambda$

$f = \frac{c}{\lambda}$

$= \frac{3 \times 10^8 \text{ m/sec}}{280 \times 10^{-9} \text{ m}}$

⑩ $\frac{3 \times 10^8 \text{ m}}{\text{sec}}, 280 \text{ nm}$

Find f $\frac{1}{\text{sec}}$

$\frac{3 \times 10^8 \text{ m}}{1 \text{ sec}} \div \frac{280 \times 10^{-9} \text{ m}}{\text{nano}} =$

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⑫ $E = 4.578 \times 10^{-19} \text{ J}$

$E = hf$

$\frac{E}{h} = f$

$f = \frac{c}{\lambda}$

$\frac{1}{\lambda} = \frac{hc}{E}$

$\lambda = \frac{hc}{E} = \frac{(6.63 \times 10^{-34} \text{ J}\cdot\text{s})(3 \times 10^8 \text{ m/s})}{4.578 \times 10^{-19} \text{ J}}$

$\lambda = 4.34 \times 10^{-7} \text{ m}$

$434 \times 10^{-9} \text{ m}$

434 nm

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