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$2KClO_3 \rightarrow 2KCl + 3O_2 + 89.4\,KJ$

mole Ratio

(a) $\left|0.632\,mol\,O_2\right| \left|\frac{89.4\,KJ}{3\,mol\,O_2}\right| = -18.8336\,KJ$

(b) $\left|8.57\,g\,KCl\right| \left|\frac{1\,mol\,KCl}{74.9\,g\,KCl}\right| \left|\frac{89.4\,KJ}{2\,mol\,KCl}\right| = 5.177\,KJ$

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50 ml 1M HCl (aq) + 50 ml 1M NaOH (aq)

$\left|\frac{4.18\,J}{g \cdot K}\right| \left|6.5\,K\right| \left|100\,g\right| = 2700\,J$ for the 100 g soln

ΔT °C or K

100 ml soln = 100 g soln

$d = \frac{1\,g}{ml}$

$C = 4.18\,J/g \cdot °$

$\Delta T = 21 \rightarrow 27.5°$

Find J for the soln

2.2 g $C_6H_4O_2$ quinone , 7.854 kJ/°C Heat capacity

23.44 °C → 30.57 °C ΔT

ΔT = 7.13

Find ① J/g ② J/mole

① $\frac{7.854\ kJ}{x} \left| \frac{7.13°}{} \right| \frac{}{2.2\ g\ C_6H_4O_2} = 25.454\ kJ/g$

$25454.1\ J/g$

$\frac{7.854\ kJ}{x} \left| \frac{7.13°}{} \right| \frac{108\ g\ C_6H_4O_2}{1\ mole\ C_6H_4O_2} \left| \frac{}{2.2\ g\ C_6H_4O_2} \right. = 2746.8\ kJ/mole$

$2.746 \times 10^3\ kJ/mole$

$2.746 \times 10^6\ J/mole$

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