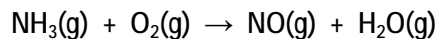


Practice Balancing REDOX equations Chem 111 (2012)

Balance the equation for this reaction



Balance the equation for this reaction in acidic solution.

- (a) $\text{Fe}^{2+}(\text{aq}) + \text{MnO}_4^{-}(\text{aq}) \rightarrow \text{Fe}^{3+}(\text{aq}) + \text{Mn}^{2+}(\text{aq})$
- (b) $\text{UO}^{2+}(\text{aq}) + \text{Cr}_2\text{O}_7^{2-}(\text{aq}) \rightarrow \text{UO}_2^{2+}(\text{aq}) + \text{Cr}^{3+}(\text{aq})$
- (c) $\text{S}_2\text{O}_3^{2-}(\text{aq}) \rightarrow \text{S}(\text{s}) + \text{SO}_2(\text{g}) + \text{H}_2\text{O}(\text{l})$

Balance the equation for this reaction in basic solution.

- (a) $\text{S}(\text{s}) + \text{OCl}^{-}(\text{aq}) \rightarrow \text{SO}_3^{2-}(\text{aq}) + \text{Cl}^{-}(\text{aq})$
- (b) $\text{MnO}_4^{-}(\text{aq}) + \text{SO}_3^{2-}(\text{aq}) \rightarrow \text{MnO}_2(\text{s}) + \text{SO}_4^{2-}(\text{aq})$

Identify the Oxidizing and Reducing agent

- (a) $\text{H}_2\text{O}_2(\text{aq}) + 2 \text{Fe}^{2+}(\text{aq}) + 2 \text{H}^{+}(\text{aq}) \rightarrow 2 \text{H}_2\text{O}(\text{l}) + 2 \text{Fe}^{3+}(\text{aq})$
- (b) $5 \text{H}_2\text{O}_2(\text{aq}) + 2 \text{MnO}_4^{-}(\text{aq}) + 6 \text{H}^{+}(\text{aq}) \rightarrow 8 \text{H}_2\text{O}(\text{l}) + 2 \text{Mn}^{2+}(\text{aq}) + 5 \text{O}_2(\text{g})$
- (c) $4 \text{Au}(\text{s}) + 8 \text{CN}^{-}(\text{aq}) + \text{O}_2(\text{g}) + 2 \text{H}_2\text{O}(\text{l}) \rightarrow 4[\text{Au}(\text{CN})_2]^{-}(\text{aq}) + 4 \text{OH}^{-}(\text{aq})$

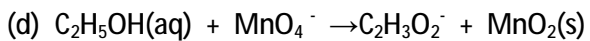
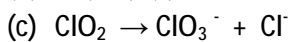
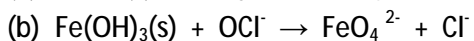
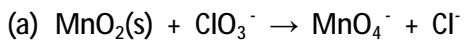
Complete and balance the half-equations.

- (a) $\text{SO}_3^{2-} \rightarrow \text{S}_2\text{O}_3^{2-}$ (acidic solution)
- (b) $\text{HNO}_3 \rightarrow \text{N}_2\text{O}(\text{g})$ (acidic solution)
- (c) $\text{Al}(\text{s}) \rightarrow \text{Al}(\text{OH})_4^{-}$ (basic solution)

Balance the equations for redox reactions occurring in acidic solution.

- (a) $\text{UO}^{2+} + \text{NO}_3^{-} \rightarrow \text{UO}_2^{2+} + \text{NO}(\text{g})$
- (b) $\text{VO}_4^{3-} + \text{Fe}^{2+} \rightarrow \text{VO}^{2+} + \text{Fe}^{3+}$
- (c) $\text{BrO}_3^{-} + \text{N}_2\text{H}_4 \rightarrow \text{Br}^{-} + \text{N}_2$
- (d) $\text{MnO}_4^{-} + \text{I}^{-} \rightarrow \text{Mn}^{2+} + \text{I}_2(\text{s})$

Balance the equations for redox reactions in basic solution.



The titration of 5.00 mL of a saturated solution of sodium oxalate, $\text{Na}_2\text{C}_2\text{O}_4$, at 25°C requires 25.8 mL of 0.02140 M KMnO_4 in acidic solution. What mass of $\text{Na}_2\text{C}_2\text{O}_4$ in grams, would be present in 1.00 L of this saturated solution?

