

CHEM 1100 Balancing redox reactions!

1. Write the net ionic reaction.
2. Assign oxidation numbers
3. Write the oxidation and reduction half reactions
4. Balance the number of electrons.
5. If in acid, add H₂O to balance for oxygen, then add H⁺ to the other side to balance for H⁺
6. If in base, add H⁺ to one side and H₂O to the other to balance for oxygen then in the end, add OH⁻ to remove excess H⁺. If OH⁻ are added to one side, then they must be added to the other!
(Add the same amount to both sides, on one side the H⁺ will combine with OH⁻ to make water, on the other you will have excess OH⁻).

1. Balance the following net ionic equations:

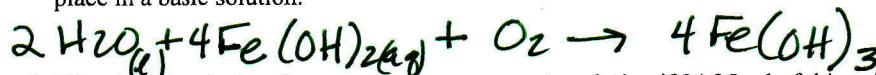
- a. Sodium chromate reacts with potassium iodide to form chromium (III) ions and iodate ions.

done in class

- b. Sodium nitrate reacts with copper wire to form nitrogen monoxide and copper(II) ions. The reaction occurs in an acidic solution.



- c. Iron(II) hydroxide reacts with oxygen to form Iron (III) hydroxide. The reaction takes place in a basic solution.



- d. What is the molarity of a potassium permanganate solution if 24.35 ml of this solution is required to react completely with 0.2600 g of oxalic acid?

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$$.2600\text{g H}_2\text{C}_2\text{O}_4 \times \frac{1\text{ mole H}_2\text{C}_2\text{O}_4}{90.04\text{g}} \times \frac{2\text{ mole KMnO}_4}{5\text{ mole H}_2\text{C}_2\text{O}_4} \times \frac{1}{.02435\text{L}} \times \frac{1000\text{mL}}{\text{L}} =$$

$$= 0.04743\text{ M}$$

$$= 4.743 \times 10^{-2}\text{ M}$$