

- You have a 0.50 mM solution of sodium phosphate.

 - Determine the concentration of sodium ions and phosphate ions in this solution.

 - If you want to dilute 1.0 mL of the 0.5 mM sodium phosphate solution to 5.0 μM , how much water must be added to the original solution?

- Consider the following four aqueous solutions:

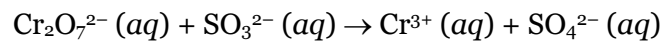
KNO_3	$\text{Mg}(\text{NO}_3)_2$	$\text{Ca}(\text{NO}_3)_2$	NH_4NO_3
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 - Which of the aqueous solutions would produce a precipitate when added to an aqueous solution of sodium sulfate?

 - Write the balanced net ionic equation for the precipitation reaction in part A.

- Determine the mass of solid precipitate formed when an excess lead(II) nitrate solution is mixed with 0.0800 mol sodium chloride.

4. Consider the following unbalanced reaction:



- A) Determine the oxidation states for the specified atoms.

Cr in $\text{Cr}_2\text{O}_7^{2-}$ _____ S in SO_3^{2-} _____ S in SO_4^{2-} _____

O in $\text{Cr}_2\text{O}_7^{2-}$ _____ O in SO_3^{2-} _____ O in SO_4^{2-} _____

- B) Balance the above reaction using the half-reaction method in acidic aqueous solution.

5. A titration is performed where 48.0 mL of 1.00 M HCl is needed to react completely with 20.0 mL of a LiOH solution with unknown concentration.

What is the concentration of the unknown LiOH solution?