

What mass of silver nitrate is needed to make 500.0 mL of a $2.38 \times 10^{-3} \text{ M}$ solution of silver nitrate?

What is the Ag^+ concentration

If 25.0 mL of that sol'n is diluted to a final volume of 100.0 mL, what is the NO_3^- concentration?

Coffee $\frac{200 \text{ mg Caffeine}}{194.19 \text{ g}} \quad \text{1 mole} \quad \text{in } 237 \text{ mL}$

ESP. $\frac{75 \text{ mg Caffeine}}{194.19 \text{ g}} \quad \text{1 mole} \quad \text{in } 30$

$$\frac{0.00103 \text{ moles}}{0.237 \text{ L}} = 0.00435 \text{ M}$$

$$\frac{0.000386 \text{ moles}}{0.030 \text{ L}} = 0.0129 \text{ M}$$

$$\frac{(\text{coffee } 0.00435 \text{ M})(0.237 \text{ L}) + (\text{espresso } 0.0129 \text{ M})(0.030 \text{ L})}{(0.237 + 0.030)}$$

$$0.0129 \text{ M} < 0.00531 \text{ M} < 0.00435 \text{ M}$$

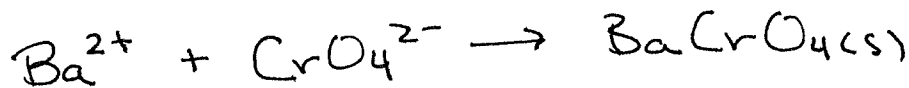
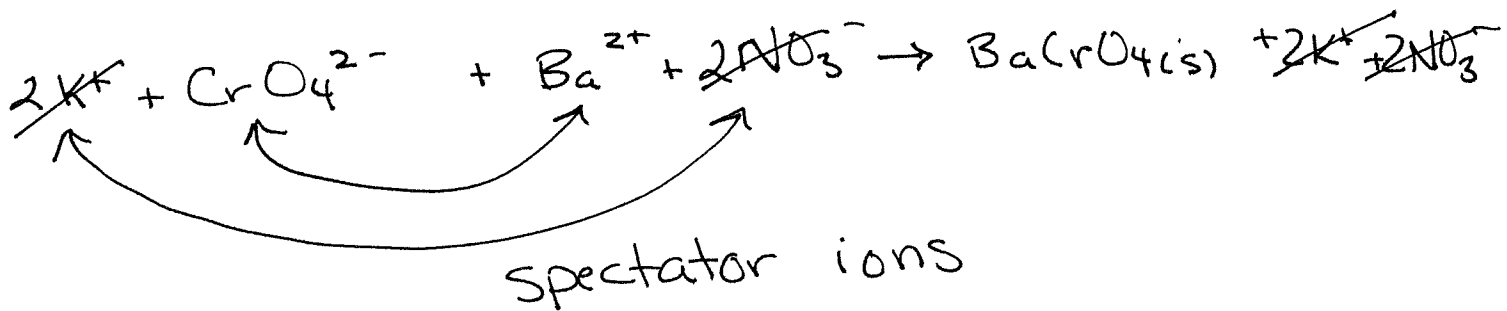
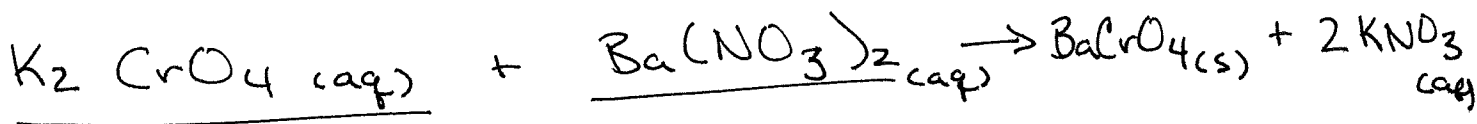
Dilution. (Mixing)

$$M_1 V_1 = M_2 V_2$$

$$\frac{M_1 V_1 + M_2 V_2}{(V_1 + V_2)} = M_3$$

Reactions in Solution

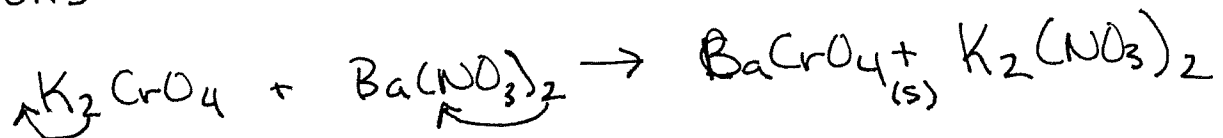
- Precipitation
- Neutralization
- Oxidation/Reduction



net ionic equation

Precipitation reaction.

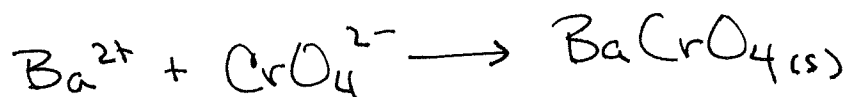
1. cations + anions switch



2. Identify what's aqueous - break it up.

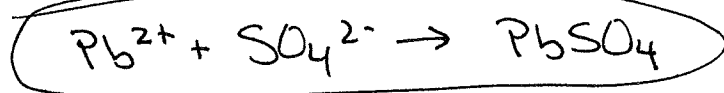
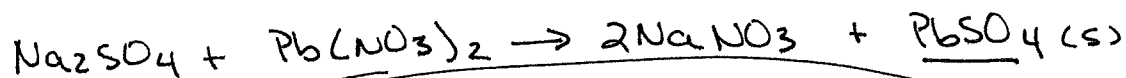
3. Cross out spectators

4. Rewrite what's left.



~~Set~~

Sodium sulfate + lead(II)nitrate →
Sodiumnitrate + lead(II) sulfate



Potassium hydroxide + Iron(III) nitrate →

Potassium nitrate + iron(III) hydroxide

