

## Lab 5. Reactions in Solution Precipitation

### Purpose:

To practice identifying reactions that result in precipitation and practice recognizing and writing equations for double replacement reactions by testing pairs of reagents and looking for signs of chemical change and writing molecular and ionic equations for the reactions.

### Prelab:

- a. Zinc Sulfide:  $\text{ZnS}$   
b. Chromium(III) Hydroxide:  $\text{Cr}(\text{OH})_3$   
c. Lead(II) Phosphate:  $\text{Pb}_3(\text{PO}_4)_2$
- a. Sodium Chloride:  $\text{NaCl} \rightarrow \text{Na}^+ + \text{Cl}^-$   
b. Copper(II) Chloride:  $\text{CuCl}_2 \rightarrow \text{Cu}^{2+} + 2\text{Cl}^-$   
c. Iron(III) Sulfate:  $\text{Fe}_2(\text{SO}_4)_3 \rightarrow 2\text{Fe}^{3+} + 3\text{SO}_4^{2-}$
- $\text{Fe}(\text{NO}_3)_3 + \text{K}_2\text{CO}_3 \rightarrow \text{Fe}_2(\text{CO}_3)_3 (\text{s}) + \text{KNO}_3$
- $0.2\text{M} * 1\text{L} = M_1 * 2\text{L}$      $M_1 = \underline{0.1\text{M}}$

### Procedure:

- Use 4-5 drops of each reagent for each pair of your tests. Note and record any sign of reaction. Test all possible pair of combinations of one group A reagent with one group B reagent. Record your observations in the data table in your notebook. Recall that not all pairs will react, and that sometimes the evidence of reaction, especially formation of a precipitate, take a few moments to appear.
- If there are any combinations about which you doubt, repeat the tests.
- Return pipettes containing unused portions of the reagent

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