Name:_____ Date: _____

MICRO-REACTIONS: PREDICTING THE PRODUCTS OF DOUBLE REPLACEMENT REACTIONS

PURPOSE:

INTRODUCTION:

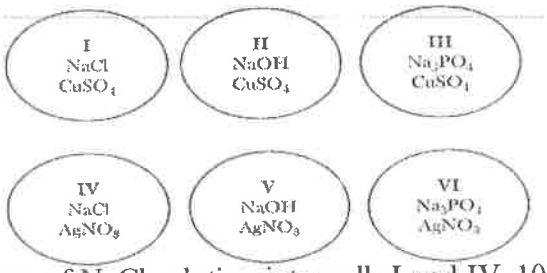
When two aqueous solutions react, the resulting products can be predicted by completing the double replacement reaction. These products can then be assessed using Table H to determine their phases of matter. Reactions where the products remain soluble are considered "no reaction" because the ions are free to dissociate again. Products that are solid are considered to have "precipitated" out of solution and the reaction has come to completion.

SAFETY:

MATERIALS:

.1 M NaCl	.1M NaOH	5 Droppers
.1 M $AgNO_3$	.1 $CuSO_4$	Spot Plate
.1 M Na_3PO_4		

REACTION SET UP:



PROCEDURE:

1. Using a spot plate, place 10 drops of NaCl solution into wells I and IV, 10 drops of NaOH into wells II and V and 10 drops of Na_3PO_4 into wells III and VI.
2. Using the Diagrams above, add 10 drops of $CuSO_4$ to wells I, II, and III and 10 drops of $AgNO_3$ to wells IV, V and VI.
3. Note any color changes or precipitates formed.

DATA AND OBSERVATIONS:

I.

II.

III.

IV.

V.

VI.

QUESTIONS:

1. What does soluble mean?

2. What does insoluble mean?

3. What does the symbol (aq) mean when it is placed next to an ionic compound?

4. What is a precipitate?

5. How can you identify a precipitate when it is written in a reaction? How can you identify a precipitate in a reaction?

6. Write a balance equation for each of the reactions that occur. Include physical state symbols for the reactants and products. If no precipitate occurs, write NO REACTION occurred.

   a. $NaCl\ (aq) + CuSO_4\ (aq) \rightarrow$ _____

   b. $NaOH\ (aq) + CuSO_4\ (aq) \rightarrow$ _____

   c. $Na_3PO_4\ (aq) + CuSO_4\ (aq) \rightarrow$ _____

   d. $NaCl\ (aq) + AgNO_3(aq) \rightarrow$ _____

   e. $NaOH\ (aq) + AgNO_3(aq) \rightarrow$ _____

   f. $Na_3PO_4\ (aq) + AgNO_3(aq) \rightarrow$ _____

DISPOSAL: Only Aqueous solutions may be flushed down the back sinks. Solids should be collected and placed into a labeled, solid waste container provided by the instructor.