

Experiment 22, Predicting Reactions

Name _____ Per _____

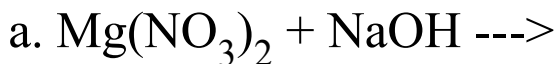
You will need to print out and bring to class: [Appendix 8](#), and [Appendix 10](#)

Purpose: To predict reactions and then test our predictions.

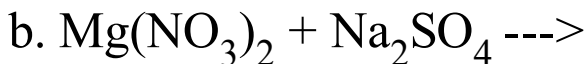
Predictions: Reactions will occur if they *remove ions* from solutions. Ions are removed by *precipitation, formation of water*, and the *formation of gases*. For **REDOX** reactions, the reaction will go if the *voltage is positive*.

Before you do the lab, Boom must sign off your predictions.

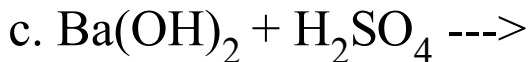
Solubility Predictions: Write the following *double displacement reactions* (switch the partners), *balance the equations*, and check the two products with [Appendix 10](#) to see if either or both of them are precipitates. If there is a ppt, then predict that the reaction will happen. If water forms, predict that the reaction will happen.



.



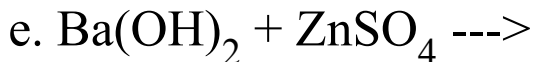
.



.



.



.

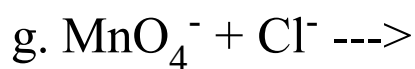
REDOX Predictions: Using [Appendix 8](#) (remember that one half-reaction always gets turned around and has its voltage reversed. For every LEO, there must be a GER), write the *two half-reactions* for the following: *Balance the equations to find the total reaction*, and find the *E in volts*. If the voltage is **positive**, predict that the **reaction will occur**.



.

.

.



.

.

.



.

.

.



.

.



.

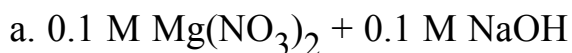
.

Part I Testing Predictions. GOGS ON! WARNING! NEVER carry a bottle by its stopper, cap, or dropper.

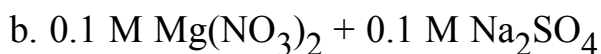
Procedure: *After Boom hath signed off your predictions, then test your predictions as follows:*

For each trial, measure 3.0 ml portions of each solution and mix in a 13 X 150 mm test tube. *Allow time for the reaction (patience)*, List your observations. If there is a reaction, tell how it compares with your predictions above:

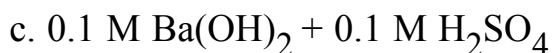
Shake sideways to mix well.



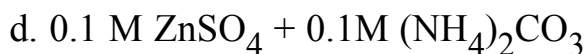
.



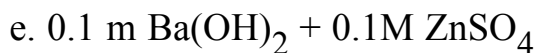
.



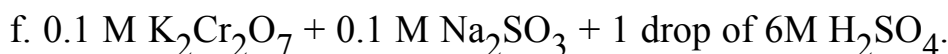
.



.



.



.

Try not to get KMnO_4 on your hands. If you do, wash well. The stains will wear off in a few weeks.



.

h. 0.1 M KI + 0.1 M FeCl₃ + 0.5 ml (10 drops) of CCl₄. Shake sideways to mix well.

i. 0.1 M KBr + 0.1 M FeCl₃ + 0.5 ml (10 drops) of CCl₄. Shake sideways to mix well.

j. 0.1 M FeSO₄ + 0.1 M KMnO₄ + 3 drops of 6M H₂SO₄.

Part II: More reactions for observations only.

Procedure: Measure 3.0 ml portions of each solution and mix in a test tube. *Allow time for the reaction*, if there is one (patience), then list your observations: *Shake sideways to mix well.*

k. 0.1 M Cr₂(SO₄)₃ + 3 drops of 6M H₂SO₄ + 5 drops of Hydrogen Peroxide, H₂O₂.

l. 0.1 M K₂Cr₂O₇ + 3 drops of 6M H₂SO₄ + 5 drops of H₂O₂.

0.1 M Pb(NO₃)₂ + 1.0 M NaCl.

CRITIQUE: