REDOX Activity Series experiment

REDOX Activity Series Experiment – Grading Rubric

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Lab Notebook –

1. Objective / Procedure
2. Data section – Be sure that data is clearly organized and clear and complete observations are made for each reaction. Observations should include color changes, temperature changes, gas formation, and precipitate formation
   1. Note when testing the halogens Br and I be sure to first test Br2 and I2 to find out what they look like in hexane. You need to clearly show that you have mixed both Br2 and I2 with hexane so that you know what the look like
   2. For all experiments which may produce either Br2 or I2 you must have an additional experiment to add hexane to those reaction vessels so that you can identify the components present.
   3. Data may be presented as either a data table or as a data log.

Sample Data log

Au+3 + I-1

Mixed 1 mL of KI with about 1 mL of gold nitrate. The solution became darker and it was difficult to determine what was happening. After the reaction had progressed for about 10 minutes, I poured some of the supernatant into another tube and added hexane. A pink color was extracted into the hexane layer.

Informal Report -

1. Title Page with experiment title, name, instructor, section number and date.
2. Data and Equations: Make table as seen in lab notebook

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Reactants | Net Ionic Equation | element oxidized | element reduced | stronger oxidizing agent | More active element |

1. Discussion - Describe any difficulties you had in determining the activity series and any points where you are unsure of the relative activities of the elements. Describe any additional experiments that might help you to make a better assessment of the relative activities.
2. Conclusion – Give the final activity rankings for the elements you tested. (Be sure to include all of the ions/metals you tested -- Br,Cu,Fe,Fe+3,H,I and Zn)

Blackboard work

1. Data
   1. This will all be reported to blackboard. You will show the complete and balanced equations for each reaction. In order to be better prepared to answer these questions you may want to do the following:
      1. Create a data table similar to the one provided in the experiment handout. The results of this data sheet will next be recorded in blackboard. Be sure to write balanced equations for each reaction that occurred. (If no reaction occurs state that. Do not write out reactions that will not occur. Remember that you can determine relative activity from a null result as well as a positive result.) For each experiment note which of the two elements is more active.
      2. (Be careful when you start working with the halogens. All of the balanced equations should be redox equations. Do not include the reactions of copper with ammonia or the reactions to detect halides with silver nitrate in your report. Note that the Fe+3 will be reduced to Fe+2 if a reaction occurs. Also remember that the hexane is used only to detect the presence of either I2 or Br2.)