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CHEM-124-L07 LAB CWID: 20324717

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Activity Series

**Objective:**

The purpose of the lab was to observe the reactivity of certain metals with different chemicals, and to determine the chemical reaction that occurs when the substances are combined.

**Procedure:**

For the first part of the experiment, a well plate was filled with about 0.5 ml of 6 Molar HCL. Small amounts of Ca, Cu, Fe, Mg, and Zn were then added into separate wells and the reaction was observed. Sn was not used. The observations were recorded and analyzed. The well plate was then cleaned and the chemicals were disposed into a designated waste beaker. For the second part of the experiment, each row of the well plate was filled with about 0.5 ml of Ca(NO3)2, CuSO4, FeSO4, Fe(NO3)3, Mg(NO3)2, and Zn(NO3)2, respectively. Samples of the each of the previous metals were placed into each well and the reactions were recorded. The metals were then ranked based on their reactivity and chemical equations for the reactions were created.

**Specialized Chemical Technique:**

Proper safety precautions were taken during the use of reactive metals and acids.

**Final Result:**

When combined with HCl, only Ca, Mg, Fe, and Zn reacted. Cu did not produce a reaction. Ca and Mg produced violent reactions which HCl, which evolved Hydrogen gas. Fe and Zn reacted relatively slower than the other metals, but the reaction still produced Hydrogen gas. When combined with solutions of metals ions, some metals reacted more strongly than others. Notably, Ca reacted with almost every solution in a violent manner. Cu did not react with any solution, and neither did Zn.

**Conclusion:**

After observing the reactivity of the metals, a relative order of reactivity can be concluded from the data. The most reactive element was Ca, followed by Mg, Al, Zn, Fe, and Cu, with Cu being the least reactive element. It should be noted that Al was not used in the experiment, but the experimental data was provided.

**Attachments:**

* Pre-lab Questions
* Report Sheet
* Post-Lab Questions