

SCH3U - Laboratory Investigation: Creating an Activity Series of Metals

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Name: _____

Question

How can you rank the metals copper, magnesium, iron, zinc and hydrogen in terms of their reactivity?

Materials

Microwell plate

Wash bottle with distilled water

Dilute $\text{HCl}_{(aq)}$

4 small pieces each of copper, magnesium, iron and zinc

Dropper bottles containing dilute solutions of CuCl_2 , $\text{Mg}(\text{NO}_3)_2$, $\text{Fe}(\text{NO}_3)_3$, ZnSO_4

Safety Precautions

Hydrochloric acid solution is corrosive, handle with care! Wipe up any spills with copious amounts of distilled water.

Procedure

1. Place your well plates on a white sheet of paper and label them according to the matrix in figure 1.
2. Place a small piece of each metal in the appropriate well. Record the appearance of each metal.
3. Put enough drops of the appropriate solution to completely cover the piece of metal.
4. Record any changes in appearance due to a chemical reaction. In reacting metals with acid, look for the formation of bubbles.
5. If you believe that a reaction has occurred indicate "R" on the matrix in figure 1. If you think that no reaction has taken place, write "NR."
6. Dispose of all solutions in the waste container provided. **DO NOT** discard any solutions in the sinks.

(Figure 1):

	HCl	CuCl_2	$\text{Mg}(\text{NO}_3)_2$	$\text{Fe}(\text{NO}_3)_3$	ZnSO_4
Cu					
Mg					
Fe					
Zn					