

Discovering Periodic Trends in Reactivity

Objectives:

- Compare the reactivity of different metals.
- Make a conclusion about reactivity trends.

Materials:

Calcium metal, magnesium metal, aluminum metal, 1M HCl, phenolphthalein, water, 6 test tubes, test tube rack

Procedure:

1. Put on safety goggles.
2. Label your test tubes 1-6.
3. In 3 test tubes add enough water to fill the test tube 1/3 full.
4. Add 2 drops of phenolphthalein to each test tube.
5. Add a piece of Ca to tube 1, Mg to 2 and Al to 3.
6. Observe for 3-5 minutes and record your observations of color, temperature and amount of bubbling in the table below. Be careful when touching the outside of the test tubes some of them may be quite hot.
7. Repeat steps 2-5 using 1M HCl in place of the water in test tubes 4-6.

Data Table:

	Color	Temperature	Bubbling
Ca + water			
Mg + water			
Al + water			
Ca + HCl			
Mg + HCl			
Al + HCl			

Analysis:

Explain how the reactivity of these metals and their placement on the periodic table are related. For example: X is more reactive than Y because it's further to the right...or closer to the top.