

## Single Displacement Laboratory: Determining an Activity Series Part I

**Reactivity** is a chemical property of an element that indicates the tendency of the element to form a compound.

- an element that forms compounds easily has high reactivity
- an element that does not form compounds has low reactivity

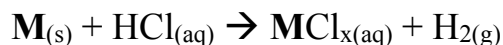
An **activity series** is a list of elements in order of their reactivity, based on evidence gathered from single displacement reactions.

**Purpose:** We will arrange a group of metals from most to least reactive based on their single displacement reaction with an acid.

**Materials:** five metals (listed in table)  
five test tubes  
test tube rack  
dilute hydrochloric acid

**Procedure:** 1) Obtain five different metal samples: calcium, magnesium, zinc, nickel, copper.  
2) Label each test tube: Ca, Mg, Zn, Ni, Cu.  
3) Into the correctly labelled test tube, place the metal sample.  
4) Add dilute hydrochloric acid to each test tube.  
5) Record observations on each test tube.

**Chemical Equation:**



(where **M** is any metal)

**Observations:**

<b>Metal</b>	<b>Observations (amount of gas evolved, heat produced, etc.)</b>	<b>Chemical Equation</b>	<b>Reactivity Rank</b>
copper			
magnesium			
zinc			
calcium			
nickel			

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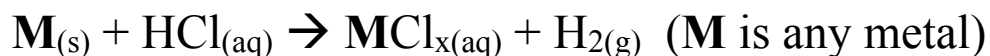
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**Observations:**

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copper			
magnesium			
zinc			
calcium			
nickel			