# Data Tables

### Part 1. Determine an Activity Series for Some Metals

Record your observations in the data table below:

	Cu <sup>2+</sup> (aq)	Mg <sup>2+</sup> (aq)	Pb <sup>2+</sup> (aq)	Zn <sup>2+</sup> (aq)	Ag <sup>+</sup> (aq)
Cu(s)					
Mg(s)					
Pb(s)					
Zn(s)					

#### Part 2. Determine an Activity Series for Some Halogens

Halogen	Color in Mineral Oil	Halide Ion	Color in Mineral Oil

#### **Reaction Data Table**

Reactants	Cl <sub>2</sub> (aq)	Br <sub>2</sub> (aq)	I <sub>2</sub> (aq)
Cl <sup>-</sup> (aq)			
Br-(aq)			
I-(aq)			

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## **Post-Laboratory Review Questions**

- 1. Write balanced net ionic equations for all the reactions that occurred with the metals.
- 2. List the metals in order of decreasing ease of oxidation. Compare this list with an activity series found in a textbook. How do the two lists correlate?
- 3. Write reduction half-reactions for each of the metal ions. Arrange the reaction list in order of decreasing ease of reduction. Compare the order with a listing found in a table of standard reduction potentials. How do the two lists correlate?
- 4. Explain how to determine if a reaction occurs in the halogen experiment.
- 5. Why should the halide ions not dissolve in mineral oil?
- 6. Explain what is meant by solvent extraction. How is it used in Part 2?
- 7. Write balanced net ionic equations for the reactions that occurred with the halogens.
- 8. List the halogens in decreasing order of reactivity. Compare this list with an activity series found in a textbook. How do the two lists correlate? Predict the location of fluorine in this activity series.
- 9. Write reduction half-reactions for each of the halogens. Arrange in order of decreasing ease of reduction. Compare the listing with the order found in a table of standard reduction potentials. How do the lists correlate?
- 10. Why was it necessary to test the halide ions for their color in mineral oil?
- 11. Would it make a difference if calcium bromide solution, CaBr<sub>2</sub>, is used rather than sodium bromide solution? Explain.