Part 1. An Activity Series for Some Metals.

Record your observations in the data table below:

	Cu ²⁺ (aq)	Mg ²⁺ (aq)	Pb ²⁺ (aq)	Zn ²⁺ (aq)	Ag ⁺ (aq)
Cu(s)	×				
Mg(s)		×			
Pb(s)			×		
Zn(s)				×	

Part 2. An Activity Series for Some Halogens.

Record your observations in the data tables below:

Halogen	Color in Mineral Oil	Halide Ion	Color in Mineral Oil

Reaction Data Table

Reactants	Cl ₂ (aq)	Br ₂ (aq)	I ₂ (aq)
CF(aq)	×		
Br ⁻ (aq)		×	
I ⁻ (aq)			×

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Post-Lab 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 which 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, CaBr₂, is used rather than sodium bromide solution? Explain.