

Chemistry w/E&S Lab Handout 08 "Flame Test and Analysis"

Your Name: _____ Role: _____

Lab Partners: _____ Role: _____ Role: _____

Problem: How can you identify an unknown cation?

Hypothesis: _____

Materials: Nichrome wire loop goggles
 Bunsen burner burner striker distilled water
 6 known cation solutions unknown cation solution 7 test tubes

Caution:

Procedure:

1. Obtain goggles and wear them for the entire lab!
2. Light the Bunsen burner with the striker.
3. Dip the Nichrome wire loop into the distilled water.
4. Heat the wire in the flame. Repeat this process until the flame is only the normal blue color.
5. Dip the Nichrome wire loop into a known cation solution.
6. Heat the wire in the flame. Observe the color of the flame.
7. Repeat steps 3 - 6 for all known samples and the unknown.

Observations:

Cations	observations
Lithium	
Sodium	
Potassium	
Calcium	
Copper	
Strontium	
unknown	

Data: (none)

Diagram:



Conclusion:

Questions:

1. What was the identity of the unknown cation?
2. Light is emitted when the electron returns to its _____.
3. What light is emitted that we can not see and has a longer wavelength than red light?
4. What light is emitted that we can not see and has a shorter wavelength than violet light?
5. If a red photon has a wavelength of 7.20×10^{-5} cm, what frequency and energy would that photon have? (Show all of your work.)

Answers: