

# Lab 3: Flame Tests

## Introduction:

(Write 10 facts from Chapter 5.)

## Materials:

nichrome wire  
water  
2 – 50mL beakers  
HCl solution  
copper (II) sulfate

strontium chloride  
cobalt chloride  
tin (II) chloride  
iron (III) chloride  
barium chloride

potassium chloride  
copper (II) chloride  
nickel (II) chloride  
manganese (II)  
chloride

## Procedure:

1. PROPERLY, light the Bunsen burner. Remember to light the flame, THEN turn on the gas. Adjust the burner so that the flame is only blue.
2. Dip your nichrome wire in the HCl solution, then hold it in the Bunsen burner until a bright orange flame forms.
3. Next dip the nichrome wire in the water, and then into one of the chemicals. Make sure that some of the chemical adheres to the nichrome wire.
4. Hold the wire in the flame and observe the color. Record your data in a chart.
5. Remember to clean the nichrome wire using HCl between each chemical. Repeat this procedure until you've tested each chemical.
6. Clean Up: Clean the nichrome wire with HCl and turn off the Bunsen burner.

## Data:

(I will show you how to do data in class.)

## Questions: (Write the questions and answer them.)

1. What is causing the metal-containing compounds to emit light? (Be specific about energy levels)
2. Why do you dip the nichrome wire in the HCl between testing each chemical?

3. What does “nichrome” mean?
4. Why do the metals emit different colors of light?
5. What is the standard electron configuration for iron?

**Conclusion:**

(Write 3 sentences about any mistakes you made, anything that you learned, how the lab relates to real life, or other reactions that you have seen that are similar to this lab.)

