

Name: \_\_\_\_\_ Period: \_\_\_\_\_ Date: \_\_\_\_\_

## Ion Flame Test Demo

I. Before the demonstration:

A. The situation - There are several types of ionic compounds. Each one will be dissolved in a small amount of methanol. The solution will be burned and we will make observations about the color of the flame.

B. Determining the Independent and Dependent variables:

1. The independent variable in this experiment is:

type of ionic compounds

2. The dependent variable in this experiment is:

the color of the flame

C. Write a problem statement:

1. How will the type of ionic compounds (I.V.)

effect the the color of the flame (D.V.)?

D. Create a hypothesis using the If/then format:

If the type of ionic compound changes then the color of the flame will change.

E. What is the control group used in this demonstration?

The control group in this experiment is burning the methanol without any compounds so there is something to compare the other samples' flames colors.

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II. During the demonstration: Data and Observations

Compound Name	Compound Formula	Positive Ion	Negative Ion	Flame test color
Methanol	CH <sub>3</sub> OH	none	none	blue
Barium chloride	BaCl <sub>2</sub>	Ca <sup>2+</sup>	Cl <sup>-1</sup>	yellow-green
Calcium chloride	CaCl <sub>2</sub>	Ca <sup>2+</sup>	Cl <sup>-1</sup>	red-orange
Copper chloride	CuCl <sub>2</sub>	Cu <sup>2+</sup>	Cl <sup>-1</sup>	green
Potassium chloride	KCl	K <sup>1+</sup>	Cl <sup>-1</sup>	pale purple
Lithium chloride	LiCl <sub>2</sub>	Li <sup>1+</sup>	Cl <sup>-1</sup>	magenta
Sodium chloride	NaCl	Na <sup>1+</sup>	Cl <sup>-1</sup>	orange
Strontium chloride	SrCl <sub>2</sub>	Sr <sup>2+</sup>	Cl <sup>-1</sup>	red
Unknowns:	Record the flame color and determine what salt is in the balloon based on the data above.			
	<b>Compound formula</b>			<b>Flame color</b>
Control	none	none	none	
Unknown #1				
Unknown #2				
Unknown #3				