

**Flame Test Data Table:**

Compound	Formula	Metal	Flame Color	e <sup>-</sup> configuration	
Calcium Chloride	CaCl <sub>2</sub>			Ca	
Copper Chloride	CuCl <sub>2</sub>			Cu	
Barium Chloride	BaCl <sub>2</sub>			Ba	
Potassium Chloride	KCl			K	
Sodium Chloride	NaCl			Na	
Lithium Chloride	LiCl			Li	
Copper Sulfate	CuSO <sub>4</sub>			Cl	
Potassium Sulfate	K <sub>2</sub> SO <sub>4</sub>			<b>Will it gain or lose e<sup>-</sup>? How many?</b>	
Sodium Sulfate	Na <sub>2</sub> SO <sub>4</sub>			Li	
Calcium Sulfate	CaSO <sub>4</sub>			K	
Strontium Nitrate	Sr(NO <sub>3</sub> ) <sub>2</sub>			Cl	
Unknown	???			Ca	
Questions					
1	What is the identity of the unknown metal solution? Describe how you know.				
2	Each of the known compounds tested contains chloride or sulfate, yet each compound produced a flame of a different color. Explain why this occurred and support your answer with examples.				
3	Was the color you saw due to the atom absorbing energy or releasing energy? In other words, is it the adsorption step or the emission step that gives off color?				
4	Predict what color Barium Sulfate (BaSO <sub>4</sub> ) will burn. Explain your reasoning.				
5	Explain the difference between emission and absorption spectra. (Look them up)				