

Flame Test Data Table and Post Lab Questions

Compound	Formula	Metal Atom	Flame Color	e ⁻ configuration	
Calcium Chloride	CaCl ₂			Ca	
Copper Chloride	CuCl ₂			Cu	
Barium Chloride	BaCl ₂			Ba	
Potassium Chloride	KCl			K	
Sodium Chloride	NaCl			Na	
Lithium Chloride	LiCl			Li	
Copper Sulfate	CuSO ₄			Cl	
Potassium Sulfate	K ₂ SO ₄			Will it gain or lose e ⁻ ? How many?	
Sodium Sulfate	Na ₂ SO ₄			Li	Ion Symbol
Magnesium Sulfate	MgSO ₄			Mg	
Strontium Nitrate	Sr(NO ₃) ₂			Cl	
Unknown #	Unknown	Unknown		S	

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?