

Flame Test Lab

Name _____

Introduction: Certain metallic ions impart characteristic colors to a flame. These flame tests are used to identify the presence of a metal ion in an unknown compound.

Objective: To identify a metal in a compound by its flame color.

Materials: Nichrome wire in a glass holder, burners, solutions of metallic compounds

Procedure:

- 1) Clean your test tubes thoroughly, then clean your wire by dipping in 6 M HCl and bringing to the upper part (oxidizing) of the flame. Repeat until the wire imparts no color to the flame. Observe the color just above the wire. Be careful to not heat the wire/glass area, as it will break.
- 2) Dip the clean wire into about 3 mL of lithium nitrate solution. Place the wire in the oxidizing part of the flame and observe the color. Also note if the color is **fleeting** (lasts for a short time) or if it is **persistent** (lasts for a long time).
- 3) Clean the wire, then repeat for each of the solutions in the data table.
- 4) Determine the metal present in the unknown solutions. Record the color, the duration, then finally the identity of the metal in the data table.

METAL	COLOR/DURATION	UNKNOWN METAL #	COLOR/IDENTITY
Lithium		1)	
Strontium		2)	
Calcium		3)	
Barium		4)	
Copper		5)	
Potassium		6)	
Sodium		7)	