Flame Test Lab Name\_\_\_\_\_\_\_\_\_\_\_\_\_

Flame tests can be used to determine the amount of energy in various chemicals by comparing the color of light they produce when burned.

Identify each compound based on the wavelength of light emitted by following the directions below.

Turn on the alcohol burner. Use the damp wooden splint to scoop a small amount of the chemical you want to test. Hold it in the flame. Observe and Record the color of the resulting flame. BE CAREFUL NOT TO LET THE CHEMICAL DRIP ONTO THE BURNER! When done, place burning splint in the EMPTY water beaker for disposal. DO NOT PUT USED SPLINTS IN FRESH SPLINT JAR! Repeat for the remaining chemicals.

It may be difficult to distinguish between yellow and orange. Retest substances if needed to be sure. Two substances produce a red flame and therefore cannot be distinguished between.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Letter | Substance | Color | Wavelength Range | Energy Level Transition |
|  | Calcium | Orange |  | -------- |
|  | Copper | Green |  | -------- |
|  | Lithium | Red |  |  |
|  | Potassium | Violet |  |  |
|  | Sodium | Yellow |  | -------- |
|  | Strontium | Red |  |  |

Atoms in the lowest energy state possible are said to be in the \_\_\_\_\_\_\_\_\_ state.

An atom that has absorbed energy is said to be in the \_\_\_\_\_\_\_\_\_\_\_\_ state.

Lower energy levels are farther or closer to the nucleus?

Do atoms produce light when they move to the excited state or the ground state?

When an atom moves to the excited state, does that mean it gained or lost energy?

The Bohr Model only works for the \_\_\_\_\_\_\_\_\_\_\_\_\_ atom.

A wave with a long wavelength has a \_\_\_\_\_\_\_ frequency.

A wave with a low frequency has \_\_\_\_\_\_\_\_ energy.

What color light has the most energy?

What type of EM radiation has the highest frequency?

Which type of EM radiation has the longest wavelength?