# 11U Chemistry Lab: Identifying Known and Unknown Metals in Compounds

Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_

*Part A:* Determining the Flame Colours of Known Metals in Compounds:

Purpose: Determine the colour of the flame emitted by a particular metal.

Procedure:

1. Clean the wire wands by holding them in the flame until no extra colour can be seen.
2. Dip the wire wand into the liquid/powder and place it in the flame of the bunsen burner.
3. Repeat step one before moving on to the next sample.

Flame Key Chart: Complete. 3

|  |  |  |  |
| --- | --- | --- | --- |
| **Compound** | **Metal Present** | **Colour of Flame** | **Observed?**  **(√)** |
| NaCl |  | golden yellow |  |
| CaCl2 |  | reddish-orange |  |
| SrNO3 / SrCl2 |  | orangy-red |  |
| KNO3 |  | Violet/red |  |
| CuCl2 |  | blue-green |  |
| Fe(NO3)3 |  | “sparks” of yellow |  |
| ZnCl2 |  | orange |  |
| BaCl2 |  | pale green/yellow |  |
| LiOH |  | cherry red |  |

*Part B*: Using the Flame Key to Identify Unknown Metals:

Purpose: Use the flame key from part A to identify the metals present in these unknown samples.

Flame Key Chart: 1 per unknown

|  |  |  |
| --- | --- | --- |
| **Unknown Sample** | **Colour of Flame** | **Metal Present** |
| 1 |  |  |
| 2 |  |  |
| 3 |  |  |
| 4 |  |  |
| 5 |  |  |
| 6 |  |  |
| 7 |  |  |

Analysis:

1. Explain fully why different metals emit different colours of flame. 3

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Conclusion: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ 2

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