

Flame Test Lab

When an atom is heated to a high temperature, its electrons gain energy and are raised to higher energy levels. When the electrons return to a lower energy level they give off excess energy in the form of light of a characteristic colour.

In the following flame tests, you will observe the flame colours of various metallic compounds.

Materials

Bunsen burner

nichrome test wires

HCl for cleaning the wire

various solutions containing metal ions

Procedure

1. Light the Bunsen burner and adjust the flame so that it is almost colourless. Stay at your station when the flame is lit.
2. Place 1 ml of each solution in a test tube.
3. Dip the tip of the nichrome test wire into each solution and then hold the wire in the flame. Record your observations in Table 1.
4. Use HCl to clean your nichrome wire.
5. Repeat for the other solutions.

Observations (5 marks)

[illegible]

Questions

1. How can a flame test be used to identify an unknown element? (2 marks)
2. Which substances produced the same flame colours? (2 marks)
3. A reddish brown rock from the Canadian Shield was held in a hot burner flame. The flame appeared emerald green. What metal was most likely present in the rock? (1 mark)