

Basic Bunsen Burner

Introduction

The Bunsen Burner will be used throughout the year as part of various labs. There are several ways to adjust the burner, and at various times a lab will ask you for a particular kind of flame. Through experimentation with the burner, you should learn to create any kind of flame asked for.

Procedure

Using the barrel of the Bunsen Burner, experiment with adjusting the flame type. You should be able to create three distinctly different flames. With the aid of a piece of copper wire from the lab bench, determine the general temperature of the flame (low, med., high). This can be done by holding the wire with some crucible tongs, and placing the wire into the flame. Be sure to check different parts of the flame for temperature.

Diagram below the three distinct flames you can create with the Bunsen Burner: In your diagram label the different temperature regions, if necessary.

Flame #1:

Temp: -----

Color:-----

Observations:

Flame #1 Diagram

Flame #2:

Temp: -----

Color:-----

Observations:

Flame #2 Diagram

Flame #3:

Temp: -----

Color:-----

Observations:

Flame #3 Diagram

- 1) Using a piece of sandpaper, remove any black material from the copper wire so that you can see its orange color.
- 2) Adjust your flame so that it is the lowest temperature flame.
- 3) Place the copper wire in the flame for about 10 seconds. Record your observations below.
- 4) Place a test tube in the low temperature flame for ten second. Record your observations below.
- 5) Try to remove the newly formed material from both the copper and the glass.

Now repeat the above experiment using the highest temperature flame.

Observations:

Do you think the black substance formed on the copper wire in the high temperature flame is the same substance formed on the wire in the low temperature flame? Why or why not?

With the Bunsen burner on the highest temperature flame try to place an unignited match head in the center of the inner cone, near the base. This has to be done with a quick motion of the hand. What happened? Label your diagram of the highest temperature flame appropriately.

