Bunsen burner essay sample



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I. Concepts

A Bunsen burner is a laboratory tool used to produce heat and light. It is named after Robert Bunsen who invented it. It consists of a straight metal tube fastened to a base. The bottom is connected by rubber tubing to a source of gas by the gas inlet. It has sliding collars to control the opening of air hole. The mixture of gas and air produces a very hot flame. It is used for heating chemicals, boiling water, sterilizing small objects, preparing microscopic slides, bending glass tubing, and for many other purposes. It can produce much hotter flame than a typical alcohol lamp. Aside from that t is a safer way of producing flame if it is used properly. Flame is the visible part of a fire. Its color indicates its temperature. The " hottest" flame which is color bluish white and almost invisible to our eyes is approximately 700°C. The " coolest" flame which is color yellow/orange also known as safety flame is approximately 300 °C. Using the right flame in heating things will help you work easier and faster.

II. Schematic Diagram

First Part:

first: close air hole

second: open air hole

Second PartThird Part

III. Analysis and Synthesis of Laboratory Results

In the first part of our experiment, we heated two test tubes with 10 mL of water. The first test tube is heated on a Bunsen burner with a close air hole

which produces an orange/yellow flame. The second test tube is heated on a Bunsen burner with an open air hole which produces a bluish white flame. When the air hole is closed, it produces a luminous flame and when the air hole is open, it produces a non-luminous flame. Luminous Flame

Non-luminous Flame

The second test tube boils faster than the first test tube. We observed that black ashes cover the parts where the first test tube is heated unlike the second test tube which is still clear.

Air Hole| Time| Close| 1min 54 secs| Open| 52 secs|

In the second part of our experiment we put the wire gauze (horizontally about ¹/₂ of the flame) in a non-luminous flame. We observed that the bluish white flame that reached the wire gauze turned into a safety yellow orange flame. We also observed that wire gauze scatters the flame so that the heat is not intense on a small part only.

In the third part of our experiment we heated a moisten cardboard in a luminous flame. We placed it vertically upward and after some seconds the part where we heated starts to dry and after about a minute (54 seconds) the flame leaves it shape on the cardboard.

In the last part of our experiment we pierced a needle into the matchstick. We placed it on the hole of Bunsen burner (needle horizontally). We open the air hole. We observed that at the end of the matchstick the non-luminous flame becomes orange yellow flame (luminous flame).

IV. Conclusion

We therefore conclude that knowing the parts of a Bunsen burner will help you use the tool properly and safely. The manipulation of its air holes can affect the type of flame that it produces. When the air hole is closed, it will produce the safety or luminous flame and when the air hole is open, it will produce the non-luminous flame. Since the non-luminous flame is the hottest, it can heat things at a faster rate than any other flame. Knowing how to adjust the air holes can help us a lot, we can properly manipulate the flame we want to use for our experiments.