Your Name

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Date

Calculating Humidity With a Sling Psychrometer

**Building a Sling Psychrometer**

First of all, I added water to the double layer of gauze just enough to moisten it. Then I covered the bulb of one red alcohol thermometer with this gauze using a rubber band. I used the red alcohol thermometer, as the mercury which is poisonous, can spread around if the thermometer breaks. Then I took a bottle. I attached the thermometer, to which I initially attached the gauze, on one side of the bottle. I attached another red alcohol thermometer to the other side of the bottle. I attached the thermometer using transparent tape so that I would easily note the reading on the thermometer. I made sure that it is tightly secure, otherwise, the thermometer would detach while spinning, and break. I used the bottle instead of the dowel so that it is easier to rotate the apparatus (*Using a Sling Psychrometer-Hommocks Earth Science Department*).

**Experiment**

To conduct this experiment, I tied a 15-inch piece of string at the bottle top. Before starting the experiment, I checked and made sure that the thermometers are attached to the bottle tightly. I also noticed that the temperature on both thermometers is same. I put on my safety goggles and went to a clear area. These precautions are necessary while experimenting with a red alcohol thermometer. I held the end of the string tightly and spun the bottle in a circular motion for one minute in the air. As soon as I stopped, I noted the temperature of both red alcohol thermometers. The temperature on the bulb with wet gauze was always lower than the temperature of the bulb without the wet gauze. The water vapors from the gauze evaporate and lower the temperature of the bulb. I calculated the temperate differences and recorded them in the chart. Through the chart, I estimated the relative humidity. The results are different in various regions or at different times as it depends on weather conditions (Brock and Richardson). The humidity of the indoor environment is significantly different from the outdoor humidity. So, I varied conditions to record measurement in different conditions.

Work Cited

Brock, Fred V., and Scott J. Richardson. *Meteorological Measurement Systems*. Oxford University Press, 2001.

*Using a Sling Psychrometer-Hommocks Earth Science Department*. *YouTube*, https://www.youtube.com/watch?v=QbcaCxuA1LI. Accessed 11 Jan. 2020.

Works Cited