

# charles' law: the effect of temperture on volume essay sample



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I.)Purpose: The purpose of this lab is to determine the effect of temperture on the volume of a gas when pressure is constant and to use the volume and temperture data to calculate a constant K, showing the relationship between these values. II.)Materials: 250 mL Erlenmeyer flask, No. 6 one hole rubber stopper, 600 mL beaker, graduated cylinder, large pneumatic trough, glass tubing, laboratory burner, ring stand, ring, wire gauze, and buret clamp III.)Procedure: First, set up the apparatus in Figure 27-1. Next, obtain a 600 mL beaker and add approximately 250 mL of tap water. Then, obtain a 250 mL Erlenmeyer flask. Place a one-hole stopper fitted with a 3 cm glass tube or a dropper pipet in the flask and place the flask in the beaker of water. Heat the water to it's boiling point and record the temperture as T1. Continue heating at this temperture for 3-5 minutes. Next, prepare a pneumatic trough or stopper the sink and add water. Remove the flask from the beaker and protect your hand with a towel while placing your finger firmly over the end of the glass tubing. Then remove your finger from the glass tubing and hold the flask under water ubntil the flask has cooled and the water ceases to enter.

Raise the flask until the water level inside is equal to the water level outside. Place your finger over the glass tubing while the outside and inside levels are equal. Remove the flask and place it in an upright position on your lab table before removing your finger. Make a mark on the flask at the bottm of the rubber stopper and remove the stopper. Measure the temperture of the water and record as T2. Measure the volume of the water in the flask with a graduated cylinder. Record the volume of water in the flask in the data table. Lastkly, refill the flask with tap water to where the placed mark was made

and measure theis volume of the water in a graduated cylindder and record it as the total volume of the flask.