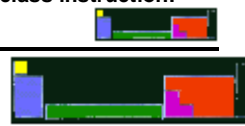


Revised August 2007



AP LAB 17a: Boiling Point Elevation

Aim To determine the boiling point elevation constant of water

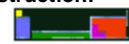
Apparatus 400 mL beaker, hot plate, temperature probe, stirring rod, magnetic stirrer

Chemicals Water, NaCl

Method

1. Calculate the mass of NaCl necessary to make 200 mL of 1.00 m solution. The density of water should be taken to be 1.00 g/ml. Measure out three separate samples of salt in this amount.
2. Start heating 200 mL of water. (Measure water with a graduated cylinder).
3. Suspend the temperature probe from a retort stand. The probe should be adjusted so that it is in the middle of the water. After adjusting the position of the probe, do not move it again during the experiment.
4. When the water begins to boil, record the temperature.
5. Quickly add one sample of salt and stir with a stirring rod. When it is dissolved and the water begins to boil again, record the temperature.
6. Repeat step #5 with the other two samples adding one at a time. The three temperatures need to be taken as quickly as possible.

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Results

Boiling point of the pure water	
Boiling point of the first solution	
Boiling point of the second solution	
Boiling point of the third solution	

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Conclusion/Calculation

1. Determine an average value for the boiling point elevation constant for water.

2. Calculate a % error in your results, based on the fact that the published value is $0.5121\text{ }^{\circ}\text{C/m}$.