

Boiling point elevation 3.4.03-00



What you can learn about ...

- Raoult's law
- Henry's law
- Ebullioscopic constants
- Chemical potential
- Gibbs-Helmholtz equation
- Concentration ratio
- Degree of dissociation

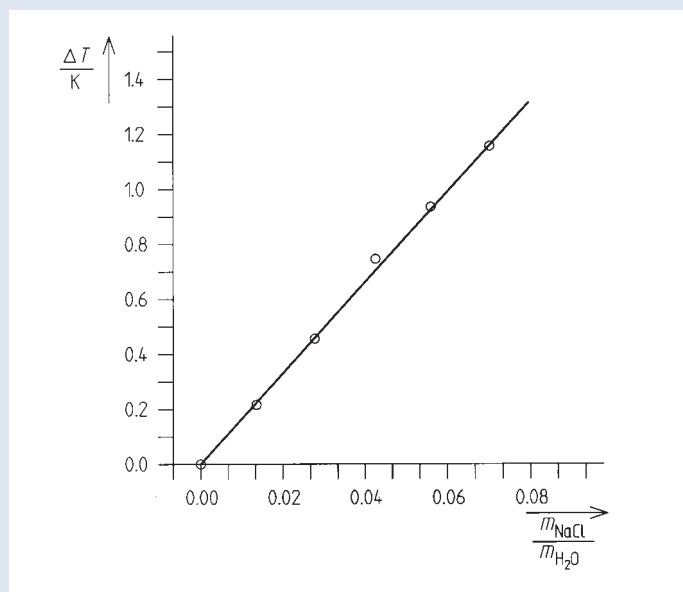
Principle:

The boiling point of a solution is always higher than that of the pure solvent. The dependence of the temperature difference (elevated boiling point) on the concentration of the solute can be determined using a suitable apparatus.

What you need:

Apparatus for elevation of boiling point	36820.00	1
Heating mantle for roundbottom flask, 250 ml	49550.93	1
Clamp for heating mantle	49557.01	1
Power regulator	32288.93	1
Precision Balance, Sartorius LE 623P	48852.93	1
Weighing dishes, square shape, 84 x 84 x 24 mm, 25 pcs.	45019.25	1
Temperature meter digital, 4-2	13617.93	1
Temperature probe, Pt100	11759.01	1
Protective sleeves for temperature probe, 2 pcs.	11762.05	1
Retort stand, $h = 750$ mm	37694.00	1
Right angle clamp	37697.00	3
Universal clamp	37718.00	3
Flask, round, 1 neck, 250 ml, GL25/14	35812.15	1
Beaker, DURAN®, tall form, 250 ml	36004.00	1
Gasket for GL 18, 8 mm hole, 10 pcs	41242.03	1
Silicone tubing, $d = 7$ mm	39296.00	1
Mortar with pestle, 150 ml, porcelain	32604.00	3
Pinchcock, width 15 mm	43631.15	1
Spoon with spatula end, $l = 150$ mm, steel, micro	33393.00	1
Wash bottle, plastic, 500 ml	33931.00	1
Pellet press for calorimeter	04403.04	1
Funnel, glass, $d = 80$ mm	34459.00	1
Pasteur pipettes, $l = 145$ ml	36590.00	1
Rubber caps, 10 pcs	39275.03	1
Beads, 200 g	36937.20	1
Sodium chloride, 500 g	30155.50	1
Urea, 250 g	30086.25	1
Hydroquinone, 250 g	30089.25	1
Glycerol, 250 ml	30084.25	1
Water, distilled 5 l	31246.81	1

Complete Equipment Set, Manual on CD-ROM included
Boiling point elevation P2340300



Example of a measurement: boiling point increase as function of concentration of table salt in an aqueous solution.

Tasks:

1. Measure the increase in boiling point of water as a function of the concentration of table salt, urea and hydroquinone.
2. Investigate the relationship between the increase in boiling point and the number of particles.
3. Determine the molar mass of the solute from the relationship between the increase in boiling point and the concentration.