

Vapour pressure of water at high temperature 3.4.01-00

What you can learn about ...

- Boiling point
- Heat of vaporisation
- Clausius-Clapeyron equation
- Van't Hoff law
- Carnot cycle

Principle:

Water is heated in a closed pressure chamber; as much water vaporises as to make the pressure in the chamber correspond to the vapour pressure at the temperature at any time. The heat of vaporisation is determined at various temperatures from the measurement of vapour pressure as a function of temperature.

Tasks:

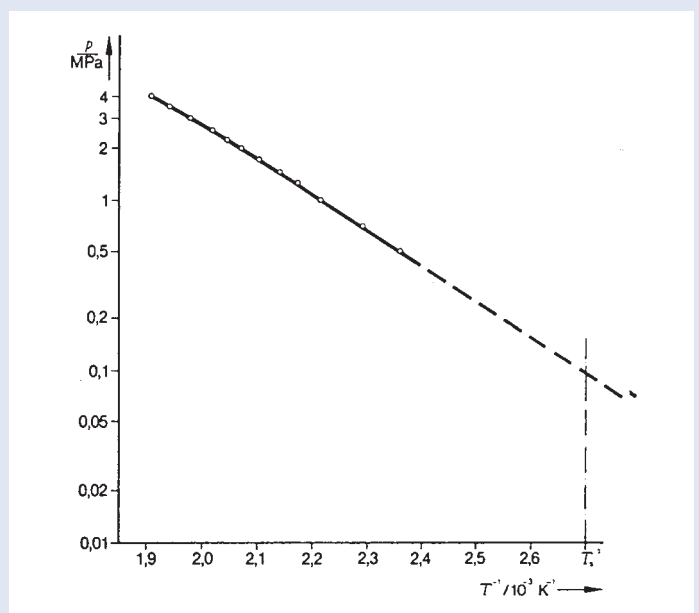
1. To measure the vapour pressure of water as a function of temperature.
2. To calculate the heat of vaporisation at various temperatures from the values measured.
3. To determine boiling point at normal pressure by extrapolation.



What you need:

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|--|----------|---|
| High pressure vapour unit | 02622.10 | 1 |
| Heat conductive paste, 50 g | 03747.00 | 1 |
| Heating apparatus | 32246.93 | 1 |
| Pipette, with rubber bulb, long | 64821.00 | 1 |
| Tripod base -PASS- | 02002.55 | 1 |
| Bosshead | 02043.00 | 1 |
| Support rod, stainless steel 18/8, $l = 250$ mm, $d = 10$ mm | 02031.00 | 1 |
| Laboratory thermometer, $-10...+250^{\circ}\text{C}$ | 38065.00 | 1 |

Complete Equipment Set, Manual on CD-ROM included
 Vapour pressure of water at high temperature P2340100



Natural logarithm of vapour pressure p as a function of the reciprocal of the temperature ($1/T$): T_b = boiling point at normal pressure.