

## Osmometers

### ► Semi-Micro Osmometer K-7400



## Determination of total osmolality of biological fluids and other aqueous liquids

Typical applications for the Semi-Micro Osmometer K-7400 range from routine testing of physiological fluids such as blood serum and urine in clinics\* up to quality control of food products like milk or isotonic soft drinks.

### Principle

The Semi-Micro Osmometer K-7400 determines the osmolality by measuring the freezing point depression of the liquid sample. Osmolality describes the concentration of osmotic effective particles in solutions, independent from type, composition or electrical charge. The osmolality refers to the mass of the solution, meaning 1 kg of pure water.

### Advantages

- Simple handling
- 2 to 4 point calibration
- Short measurement time (2–3 min)
- Reasonable price
- Fully automated measurement
- Automatic storage of measurement values
- Air cooling
- Cooling process is thermistor controlled
- Cooling chamber will not freeze

### Medical\* applications

- Poisoning
- Monitoring kidney functions
- Diabetes Insipidus
- Shock (trauma)
- Clearance control
- Lactation control
- Dialysis control
- Control of infusion solutions in pharmacies
- Control of iso, hyper, and hypotonic solutions
- Blood control and control of other transfusion supplies
- Control of osmotic pressure in cell culture media for biotechnology and genetic engineering

\* In vitro diagnostics approval required for EU and other countries is in preparation.

### Operation

150 µl of an aqueous solution or a biological fluid are super cooled below the melting point. Then a stirring needle (vibrator) automatically initiates crystallization. The crystallization warmth causes a temperature rise up to the melting point (below 0 °C). The temperature difference to 0 °C measured is proportional to the number of free particles in the solution. The measurement value in mOsmol is shown in the display.

### Technical data

<b>Measurement accuracy</b>	error ≤ 1%
<b>Measurement precision</b>	RSD < 1%
<b>Calibration</b>	2 calibration points necessary – up to 4 calibration points accepted
<b>Sample volume</b>	150 µl
<b>Measuring time</b>	2 minutes
<b>Guaranteed range</b>	0–2000 mOsmol
<b>Possible range</b>	0–3500 mOsmol
<b>Communication</b>	RS-232 interface connects to PC or printer A0591
<b>Power supply</b>	90–260 V, 47–63 Hz, max. 70 VA
<b>Dimensions K-7400</b>	160 x 182 x 340 mm (W x H x D)
<b>Printer</b>	76.8 x 77.4 x 39.3 mm (W x H x D)
<b>Weight K-7400</b>	5.0 kg
<b>Printer</b>	0.15 kg

### Ordering information

Order no.	Osmometer	Order no.	Accessories
A3707	Semi-Micro Osmometer K-7400	A0591	Printer
A3707-1	Semi-Micro Osmometer K-7400 with printer	A0840	Measuring Head for glass vials
A3709	Semi-Micro Osmometer K-7400 with Measuring Head for plastic vials	A0840-1	Measuring Head for plastic vials
A3709-1	Semi-Micro Osmometer K-7400 with printer and with Measuring Head for plastic vials	Y1240	Calibration Solution 300 mOsmol/kg
		Y1241	Calibration Solution 400 mOsmol/kg
		Y1243	Calibration solution 1000 mOsmol/kg
		Y1248	Calibration solution 2000 mOsmol/kg
		A0913	Measuring Vials (glass), 1000 pcs
		A0720	Measuring Vials (plastic), 1000 pcs

Technical data are subject to change without notice.

Visit [www.knauer.net](http://www.knauer.net) for details on complete HPLC systems, HPLC columns, and osmometers.

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