

Technical data of the OSMOMAT® auto

Sample volume:	50µl
Duration of a single measurement:	approx. 70 seconds
Reproducibility:	≤ ± 1%
Measuring range:	0 up to 2500 mOsmol/kg
Resolution:	1 mOsmol/kg over the entire range
Initiation of the crystallization process:	by inoculation of the sample with ice crystals
Calibration:	2 or 3 adjustable points
Cooling:	peltier-cooling system with heat dissipation by air
Humidity:	10-90% non condensing
Display:	LCD-display, 4 lines à 20 digits
Ambient temperature:	10°C up to max. 30°C
Power supply:	~100/115/230 V, 50/60 Hz, 120 VA
Weight	approx. 11,6 kgs

Internal printer:	alpha-numerical matrix printer 5 × 7 matrix
digits:	4-digits for sample number, 4-digits for result
paper:	normal paper, 43 mm
ink ribbon:	endless ink ribbon cassette, exchangeable
printer function:	switch on/off 3 print modes
error:	the nature of error is printed clearly
RS-output:	data output (serial) standardized interface
baud rate:	9600 bps
data format:	8 data bits, 1 stop bit (no parity check)
data line:	TXD
connector:	D-Sub, 9-pole
Interface:	external barcode reader

Technical modifications are subject to change

Standard accessories: 1000 disposable plastic measuring vessels
20 ampoules of calibration standard
300 mOsmol/kg
10 ampoules of calibration standard
850 mOsmol/kg
10 ampoules of OSMOREF® 290 mOsmol/kg
2 spare fuses
8 rolls of printer-paper
1 roll of cleaning paper
1 adjustment tool
1 mains cable
1 instruction manual

Optional: external barcode reader with mains adapter

Manufactured and sold by:

gonotec

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gonotec

• **simple and fast** •

The multi-sampler of Gonotec solves your problem
with processing large numbers of samples



**NOW
AVAILABLE
3-Point
Calibration**

OSMOMAT® auto

FULLY AUTOMATIC CRYOSCOPIC OSMOMETER

- small sample volume
- optional barcode reader
- simple calibration
- menu-driven operation

The OSMOMAT[®] auto is a fully automatic freezing point osmometer, which is used for measurement of total osmolality in aqueous solutions. Up to 20 samples per measuring series are automatically analyzed and the results are stored.

The OSMOMAT[®] auto is based on the for decades proven measuring principle of the OSMOMAT 030.

A powerful and efficient measuring system is obtained by means of the system to initiate crystallization with ice crystals and the simple menu-driven operation allows its application in laboratories with a daily large number of samples.

With the foil keyboard or the optional barcode reader, the sample data are entered before measurement and are completed by the measuring result automatically. The results are stored (max. 200 samples) and can be printed either immediately or by order of the user by means of the integrated printer using standard paper. A connection to a PC is possible by means of the integrated RS232C data output.

To cope with the increasing demand of the pharmaceutical industry, the OSMOMAT[®] auto is equipped with 3-point calibration option to allow a calibration with water and two further adjustable calibration points.



FIELDS OF APPLICATION OF THE OSMOMAT[®] auto:

The freezing point osmometer is specially designed for laboratories with a daily large number of samples, for routine measurements in the medical field and for measurements in research and industry. The OSMOMAT[®] auto determines the total osmolality of aqueous solutions. The instrument requires very small sample volumes and can thus be applied for extreme measuring tasks. Its rapidity allows serial measurements in a very short time.

THE MEASURING TECHNIQUE

The total osmolality of aqueous solutions is determined by comparative measurements of the freezing points of pure water and of solutions. Whereas water has a freezing point of 0 °C, a solution with saline concentration of 1 Osmol/kg has a freezing point of -1.858 °C.

THE OSMOMAT[®] auto CAN BE USED IN:

General medicine

Routine and research

Forensic medicine

Electron microscopy

Physiology

Clinical laboratories

Intensive care laboratories

Paediatrics

Gynaecology

In vitro Fertilization

Urology

Nephrology

Hemodialysis/

Hemofiltration

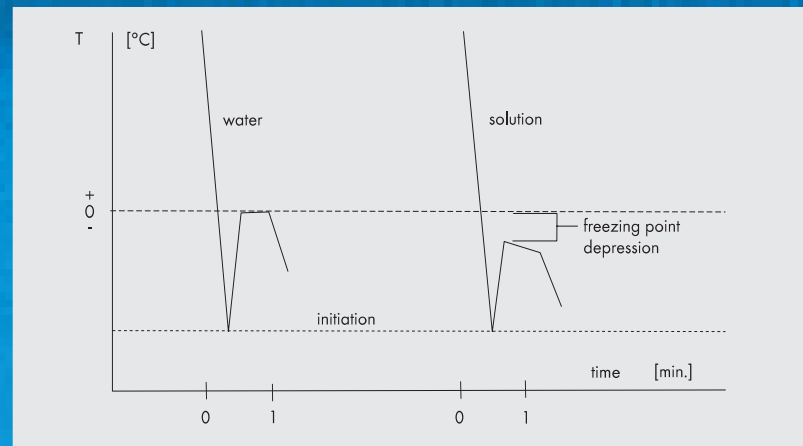
Veterinary medicine

Botany

Pharmacy

Dispensaries

etc.



FUNCTION OF THE OSMOMAT[®] auto

The sample solution is cooled by means of a peltier cooling system, the temperature being electronically controlled. When the sample solution has reached its target temperature below the freezing point the crystallization process of the sample is automatically initiated. This is done by injecting ice crystals into the solution (a stainless steel needle is cooled by means of a second cooling system to such an extent that tiny ice crystals stick to its tip; this needle is plunged into the super-cooled sample solution for a short time). Hereafter the temperature rises spontaneously until it has reached the crystallization-temperature, the latter is measured with a resolution of 1.858/1000 °C (see diagram on the left). The reproducibility of the result depends definitely on the exact initiation of the crystallization process at the standardized supercooling temperature. With regard to precision the automatic initiation of the crystallization process by injecting ice crystals (as realized with the OSMOMAT[®] auto) offers a distinct advantage

as opposed to other procedures (i.e. vibration or stirring of the solution, or manual initiation of the crystallization). Consequently, with the OSMOMAT[®] auto, precision of measurement no longer depends on individual operation. Up to 20 samples per measuring series are automatically analyzed and the results are stored.

ALL ADVANTAGES OF THE OSMOMAT[®] auto AT A GLANCE

- ✓ relief of the user by means of the fully automatic measurement of up to 20 samples
- ✓ automatic calibration: no manual adjustment of a potentiometer is required
- ✓ no ice formation in the lower cooling system: reliable measurements even for long working periods
- ✓ measuring time approx. 70 secs. per single measurement: important for daily large number of samples

- ✓ automatic measuring: simple operation
- ✓ minimum sample volume: 50 µl standard sample volume
- ✓ disposable plastic measuring vessels: saves time and money
- ✓ air cooling: no water supply needed, electronic wall-socket suffices
- ✓ latest electronic engineering: microprocessor controlled, automatic determination, display and storage of the result
- ✓ clearly arranged front panel with menu-driven operation and LCD-display
- ✓ automatic error-detection: display shows clear error messages
- ✓ entering of sample data by means of a barcode reader possible
- ✓ measurement documentation by means of an integrated printer: provides a hard copy of the result with date, time and sample data
- ✓ favourable price



MEASURING IS AS EASY AS THIS

Switch the instrument on

The OSMOMAT[®] auto is ready for measurement within less than three minutes after switching on. In the meantime you can pipette the sample solutions into the disposable plastic measuring vessels which are then inserted into the sample holder.



Start measuring

After entering of the sample data with the foil keyboard or the barcode reader, measurements are started by insertion of the sample holder.



The measuring results are stored and are printed by order of the user

You take out the sample holder after approx. 23 minutes and you can continue with the next serial measurements.

Calibrating is as easy as this

The OSMOMAT[®] auto is calibrated by performing measurements with distilled water and with a calibration solution of 300 mOsmol/kg or 850 mOsmol/kg. In addition a control with our reference solution OSMOREF[®] 290 mOsmol/kg is possible. The sample holder is pipetted with water on position 0 and 1 and with calibration solution on position 2 and 3. The calibration values are automatically taken over and the instrument is afterwards ready for measurements.