50 µl Sample Size

OSMOMAT® FREEZING POINT OSMOMETER

A non-invasive in vitro diagnostic product
used to determine the osmolality of aqueous solutions.

Innovation with Integrity

APPLICATIONS

- General medicine
- Sports laboratories
- Forensic medicine
- Electron microscopy
- Physiology
- Clinical laboratories
- Botany
- Pediatrics
- Gynecology
- Military hospitals
- In vitro fertilization
- Urology
- Nephrology
- Hemodialysis
- Veterinary medicine
- Intensive care laboratories
- Pharmacy
- Dispensaries
- Contact lens manufacturing
- Food/beverage manufacturing

Software for data transfer

For serial data transfer to a PC or information system (like LIS or HIS) a corresponding receiving software is needed on the target system. Bruker does not supply such software solutions and does not support software products from other manufacturers.

THE PERFECT COMPANION FOR DETERMINING THE OSMOLALITY OF AQUEOUS SOLUTIONS

Measurement Technology

Osmometry is an analytical measuring method for determining the osmotic value / pressure (often referred to as simply the osmolality) of a sample.

The osmolality is defined as the concentration of all dissolved – and thus osmotically effective – particles in a solution based on 1 kilogram of solvent. **The unit of osmolality is Osm/kg or Osmol/kg.**

The freezing point of a sample changes depending on the concentration of dissolved substances.
Pure water has a freezing point of 0 °C. The solution of one or several substances in water leads to lowering of the freezing point. A solution with an osmotic value of 1 Osmol/kg has a freezing point of -1.858 °C.

Through the linear correlation between the freezing point of a sample and its osmolality, **freezing point osmometry provides high-precision analytics.**

Application

Freezing point osmometers are used in numerous areas of application, such as medical, pharmaceutical, biotechnology, food and beverage, and chemical industries.

In the human body osmotic processes and osmoregulation play an important role: a disturbance of the osmotic equilibrium can lead to numerous health impairments.
In many cases, osmometers are used in the medical and pharmaceutical industries to determine the osmolality of blood or urine samples or pharmaceutical formulations by freezing point osmometry.
The **OSMOMAT® 3000** series have been specially designed for routine measurements in the medical and pharmaceutical fields but due to their robustness, precision and ease of use the devices are the perfect choice for many others areas as well.

The OSMOMAT determines the total osmolality of aqueous solutions, requires extremely small sample amounts, and allows serial measurements in the shortest possible time.

VQC PROGRAM

- Online, real-time quality control evaluation and comparison program
- Assists with evaluating the performance of your osmometer by comparing your QC results to those of other laboratories worldwide using the same instrument and lot of controls
- Monthly reports assist with routine record-keeping
- Participation in a peer group comparison program fulfills good lab practice guidelines
- Provided at no additional charge

Specifications OSMOMAT® 3000 series

Models	3000, 3000-D
Display	5.7'' LCD touch screen
Weight	6.5 kg (14.3 lbs.)
Dimensions (WxHxD)	205 mm x 360 mm x 220 mm (8.1'' x 14.2'' x 8.7'')
Cooling	2 separate peltier elements / heat dissipation through active ventilation
Sample volume	50 µL
Measurement	Measurement of single samples or batch processing
Measurement time	~ 60 seconds
Resolution	1 mOsmol/kg H_2O
Units	mOsmol/kg, Osmol/kg, °C
Measurement range	0 to 3000 mOsmol/kg H_2O
Reproducibility Models 3000 and 3000-D	≤ 2 mOsmol/kg (SD) [0 to 400] mOsmol/kg ≤ 0,5 % (CV) [400 to 1500] mOsmol/kg ≤ 1 % (CV) [1500 to 3000] mOsmol/kg
Calibration	2 point calibration, 3 point calibration
Linearity	Deviation less than ±1 % in the calibrated range
Ambient temperature	10 °C to 35 °C
Power supply	100 – 240VAC, 50 / 60 Hz, 80 VA
Interfaces	RS-232, USB
Output formats	CSV, XML
Printer Model 3000-D	Graphical dot matrix printer for date, time and sample information for each measurement
Printer paper	Plain paper, 43 mm (1.7'') wide
Ribbon	Endless ink ribbon cartridge, replaceable
Error messages	Printed in plain text
Software laguages	German, English, Spanish, French, Portuguese, Chinese

	Item number
OSMOMAT® 3000	# 32.00000
OSMOMAT® 3000 D	# 32.10000

Optional Accessories

	Item number
Handheld barcode scanner with power supply, connection cable and manual	35.9.2000

Accessories and supplies

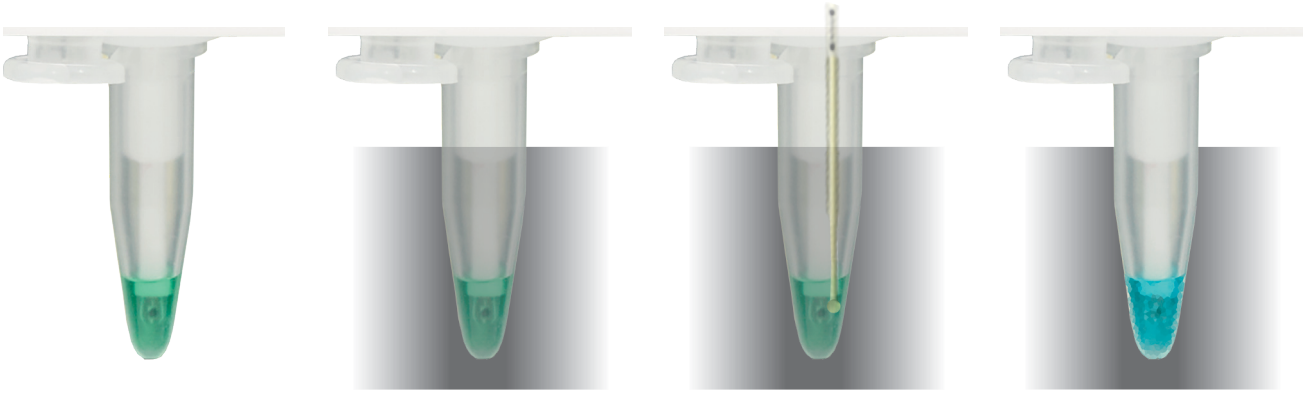
Accessories	Item number
250V Power Cord - Europe Plug Typ E+F (CEE 7/7)	20.9.0100
RS-232 data cable	20.9.0165
USB cable	20.9.0166
Adjustment tool	30.2.0030
Ampoule opener	30.9.1050
Bellow (pasteur pipette)	30.9.0030

Supplies	Item number
Calibration Standard 100 mOsmol/kg NaCl/H2O, 10 x 1 ml	30.9.0100
Calibration Standard 300 mOsmol/kg NaCl/H2O, 10 x 1 ml	30.9.0020
Calibration Standard 500 mOsmol/kg NaCl/H2O, 10 x 1 ml	30.9.0500
Calibration Standard 850 mOsmol/kg NaCl/H2O, 10 x 1 ml	30.9.0850
Calibration Standard 2000 mOsmol/kg NaCl/H2O, 10 x 1 ml	30.9.2000
Reference Solution OSMOREF® 290 mOsmol/kg NaCl/H2O, 10 x 1 ml	30.9.0290
Printer paper, OSMOMAT® 3000 D / 8 rolls	30.9.1010
Endless ink ribbon cartridge, OSMOMAT® 3000 D	30.9.1020
Measuring vessels / 1,000 pcs.	30.9.0010

Standard accessories (included in the start-up kit)

1 Power cord
2 RS-232 data cable
3 USB cable for connection to PC or Laptop
4 Measuring vessels, 100 pcs.
5 2 spare fuses T 1.6A (HBC 1500A)
6 Adjustment tool
7 Calibration Standard 300 mOsmol/kg, 10 x 1 ml
8 Calibration Standard 850 mOsmol/kg, 10 x 1 ml
9 Ampoule opener
10 Bellow (pasteur pipette)

Measurement method: Freezing Point Osmometer



Position measuring vessel on the thermistor probe.

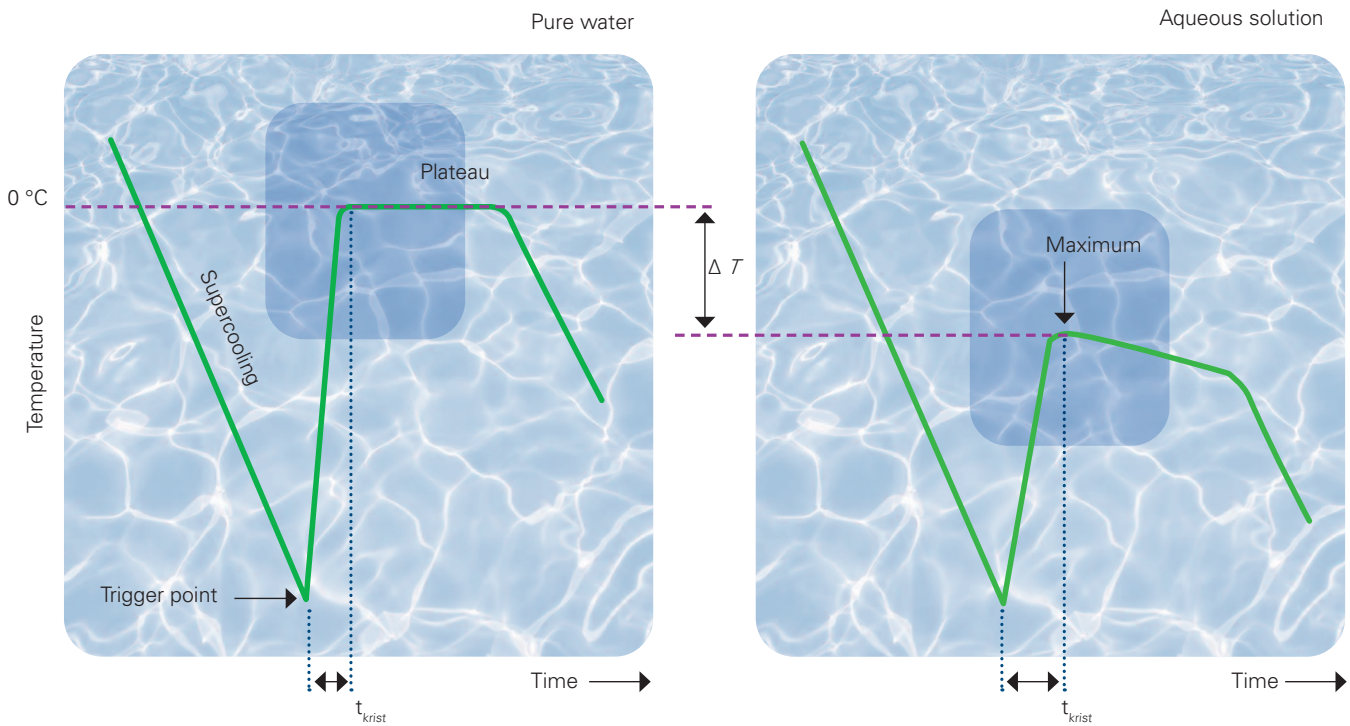
Sample is moved into the lower cooling system and cooled to less than 0 °C by a microprocessor-controlled peltier element.

Injection of an ice crystal by cooled triggering needle (cryst-needle).

Crystallization of the sample material.

At the beginning of the measurement, the sample is supercooled in the lower cooling system. The freezing process of the sample material is released in a controlled manner by injecting an ice crystal using the release/triggering needle.

The crystallization process leads to the release of thermal energy and the temperature of the sample increases until a plateau phase or a maximum is reached, which depicts the actual freezing point of the sample.
At this point, the temperature is measured with an accuracy of 0.001 °C using a high-precision temperature sensor.



OSMOMAT® 3000

The Standard Model

- Sample volume: 50 µL
- Easy handling and maintenance
- Comfortable calibration routine
- Connectivity for data transfer to PC or laptop
- Optional barcode reader
- Delivery including standard accessories and qualification document (IQ/OQ/PQ)

OSMOMAT® 3000-D

The Premium Model with Printer

- Sample volume: 50 µL
- Easy handling and maintenance
- Comfortable calibration routine
- Connectivity for data transfer to PC or laptop
- Optional barcode reader
- Delivery including standard accessories and qualification document (IQ/OQ/PQ)

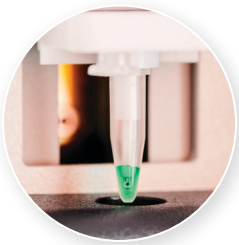
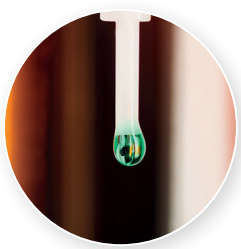
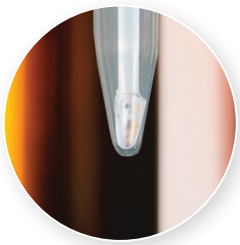
Accessories and supplies

Not included in the Start-up kit

- Comfortable calibration standards
- Handheld barcode scanner with power supply
- Printer paper and ribbon cartridge

ADVANTAGES OF THE OSMOMAT®

- Robust, precise, reliable, and fast
- Easy control via the integrated touch screen display
- Step-by-step guidance through all measuring functions and setting options
- Two- or three-point calibration
- Automatic and safe calibration with Bruker Calibration Standards
- Data transfer to PC or laptop via RS-232 or USB
- Last result remains available after switching to automatic stand-by mode
- QM assistance for the laboratory supervisor
- On-board printer to output results (Model 3000-D)
- Over 40 years of experience in precision measurement technology and osmometry
- Comprehensive advice and reliable service from our experts

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