

Automatic Osmotic Pressure Analyzer

OSMO STATION 2

OM-6070 | Osmotic pressure



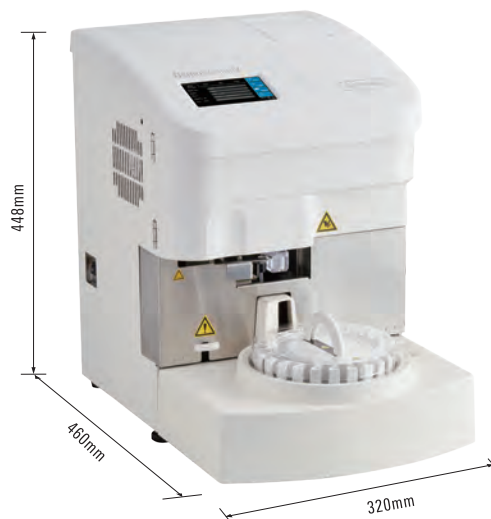
Osmotic pressure analyzer with freezing-point depression method.

Fast - results in only 2 minutes.

Quiet and Accurate.

OSMO STATION 2

OM-6070 | Osmotic pressure



Features

- Continuous measurement of up to 24 samples.
- Measurement in sample cups and sample tubes.
- Built-in barcode reader for positive sample identification and traceability.
- Additional turntable for urine spitz tubes available (optional).



STAT Measurement

Urgent patient samples can be run in STAT port.



Evaluation of basic performance

Within-run reproducibility

	Serum		Standard solution		Urine	
	Low	High	Low	High	Low	High
MEAN (mOsm/kg)	283.1	316.7	298.4	999.2	534.9	1017.9
SD (mOsm/kg)	0.6	1.2	0.7	2.3	2.1	4.1
CV (%)	0.2	0.4	0.2	0.2	0.4	0.4

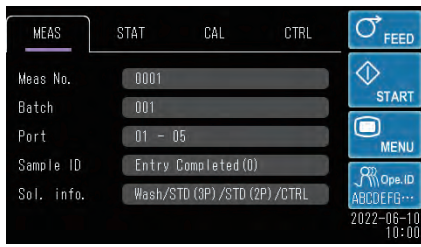
Between-run reproducibility

	Serum		Standard solution		Urine	
	Low	High	Low	High	Low	High
MEAN (mOsm/kg)	284.2	298.7	300.3	994.7	535.5	1015.5
SD (mOsm/kg)	0.2	0.5	1.0	2.1	2.0	3.1
CV (%)	0.1	0.2	0.3	0.2	0.4	0.3

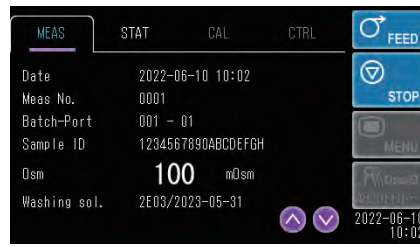
Citations: "Basic Study of Osmotic Pressure Analyzer OSMO STATION 2 (OM-6070), Japanese Journal of Medicine and Pharmaceutical Science Vol. 80, No. 4, 2023", pp. 405-414
 *Data were obtained in-house and are not to indicate the specifications of the product.

Seamless user interface with touchscreen

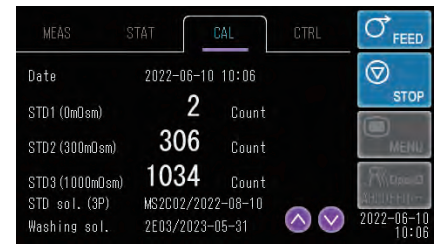
The touch screen enables intuitive operation and immediate access to data and settings.



Standby screen



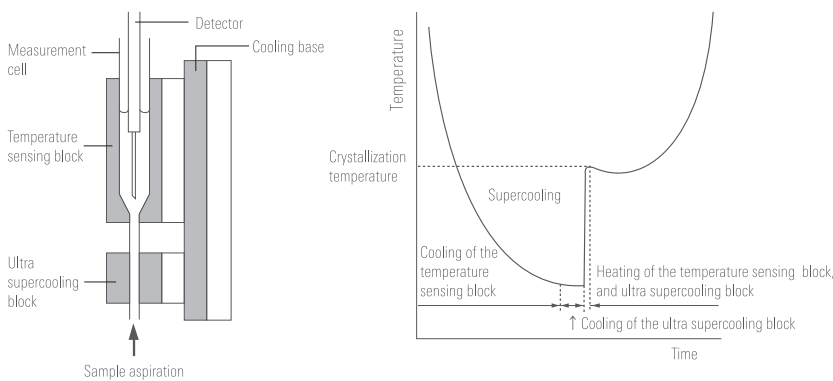
Measurement results screen



Calibration result screen

Osmolality measurement using freezing-point depression method with ultra supercooling (USC)

Its unique measurement method enables a quiet and accurate measurement.



Conceptual diagram of the Measurement cell

The sample temperature during measurement

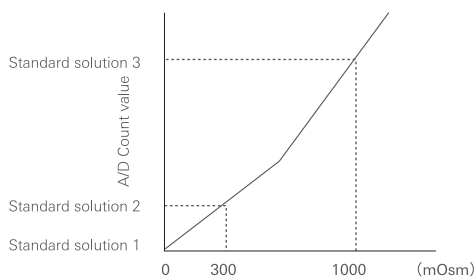
<Principle of the freezing-point depression method>

1. The sample aspirated by the nozzle is sent to the measurement cell.
2. By gradually cooling down the temperature sensing block, the sample remains in its liquid state without freezing at the freezing point.
3. By cooling down the ultra supercooling block to below the freezing point, the sample freezes instantly to form ice crystals.
4. Measures the ice crystal formation temperature of the sample and calculates the osmotic pressure from the calibration curve obtained by calibration.
5. Heats the temperature sensing block and the ultra supercooling block, then the sample melts.
6. Samples are discharged into the waste fluid bottle.

Flexible options for your calibration

3-point calibration

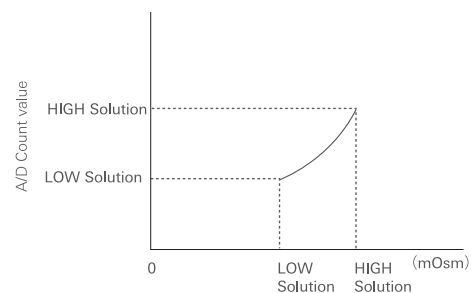
The calibration curve is based on measuring 3 standard solutions: 0 mOsm, 300 mOsm and 1000 mOsm. A polygonal line is drawn based on the 3 standard solution results. This is used for the routine sample measurement or for wide-ranging measurements where the osmotic pressure of the sample is unknown.



Calibration curve graph for 3-point calibration method

User defined 2-point calibration

Allows for complete flexibility of measurement range to user defined requirements. The calibration curve is created using a logarithmic curve connecting two points obtained from the measurement results of each standard solution.



Calibration curve graph for 2-point calibration method

Specifications	
Measurement objects*1	Serum, plasma, and urine
Measurement items	Osmotic pressure of body fluid (osmotic pressure ratio)
Measurement principle	Freezing-point depression method using ultra supercooling
Measurement range*2	0 - 2000 mOsm (switchable to 0 - 2500 mOsm)
Required sample volume	Sample cup: minimum 200 μ L Sample tube: minimum 2 mL
Measurement time	2 to 3 minutes/sample
Sample loading capacity *3	Up to 24 samples (turntable), Up to 10 samples (turntable for urine sample tubes*3)
Calibration method	3-point calibration (0, 300, 1000 mOsm: polygonal line approximation), 2-point calibration (Any 2-point: logarithmic curve approximation)
Memory capacity	500 measurement results
Display screen	4.3-inch color LCD with touchscreen
Built-in printer	58 mm thermal printer paper (24 digits)
External output	Compliant with RS232C, Ethernet (optional), USB (for data-output)
Operating conditions	Temperature: 10 - 30 °C; Humidity: 20 - 80 % RH (Non-Condensing)
Power consumption	Maximum 160 VA
Power supply voltage	AC 100 - 240 V, 50/60 Hz
Dimensions	320 (W) x 460 (D) x 448 (H) mm
Weight	Main body: 22 kg, Turntable unit: 3 kg

This instrument conforms to EMC Standard JIS C 61326-2-6:2019.

*1: We cannot guarantee any errors in measurement results from samples other than serum, plasma, or urine. Also, since our instrument employs the freezing-point depression method as its measurement principle and uses sodium chloride solution as the calibration standard solution, there is a possibility that the measured values may deviate if samples with different liquid properties (viscosity, etc.) from those of the sodium chloride solution are measured.

*2: Please contact us about changing the measurement range.

*3: Turntable dedicated for urine sample tube is optional.

OSMO STATION Control Solution Set



Accuracy control is achieved using a dedicated control solution.

No preparation required

Liquid reagent ready to use

Easy storage

Can be stored at room temperature

Dedicated reagent

Internal QC of osmotic pressure supports ISO/GLP certifications

Legal manufacturer

arkray factory, inc.

1480 Koji, Konan-cho, Koka-shi, Shiga 520-3306, JAPAN

European representative

arkray europe, b.v.

Prof. J.H. Bavincklaan 2, 1183 AT Amstelveen, THE NETHERLANDS

<https://www.arkray.eu/english/>

*Designs and specifications may be changed without prior notice.

arkray global business, inc.

Yousuien-nai, 59 Gansuin-cho, Kamigyo-ku,

Kyoto 602-0008, JAPAN

TEL +81-75-662-8979 FAX +81-75-431-1202