



Automatic Osmotic Pressure Analyzer

# OSMO STATION

OM-6060

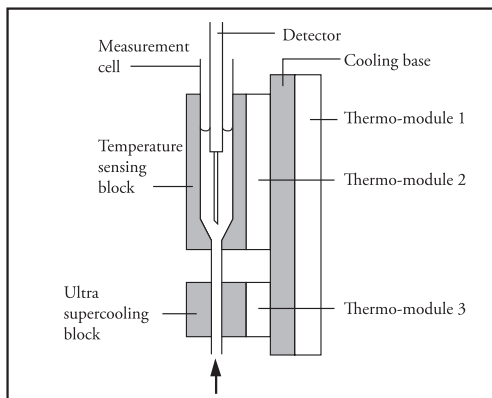


Measurement of Osmotic Pressure (<1% CV) in less than 3 minutes

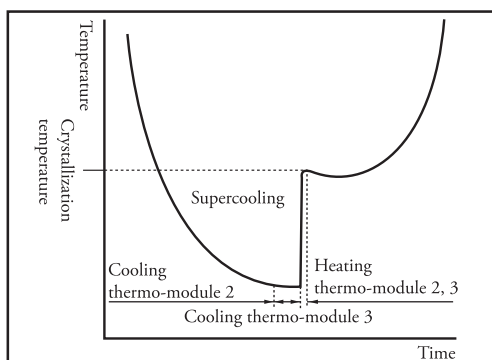
Noise-free, proven freezing-point depression method using ultra supercooling

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Measurement cell



Sample temperature during measurement

## Ultra supercooling measurement method

ARKRAY'S ultra supercooling method enables noise-free, accurate measurement.

### < Freezing point depression principle >

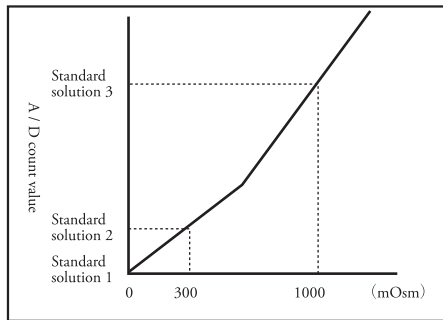
1. A sample is drawn into the measurement cell.
2. Cooling the temperature sensing block keeps the sample in a liquid state even if the temperature falls to its freezing point (supercooling state).
3. Cooling the ultra supercooling block to below its freezing point allows the sample to freeze into cryohydrate.
4. The sample's cryohydrate formation temperature is measured and the osmotic pressure is calculated based on the calibration curve obtained via calibration.
5. By heating the temperature sensing block and ultra supercooling block, the sample dissolves.
6. The measurement result is printed and the sample is discharged into the drain bottle.

## Calibration

There are 2 possible calibration methods.

### 3-point calibration

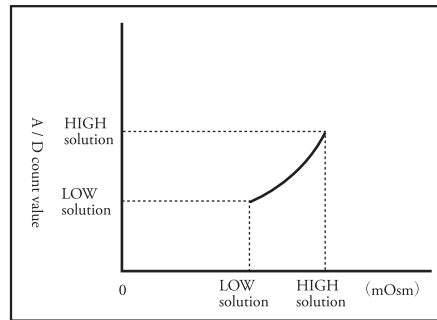
Purified water (0 mOsm) and Standard Solution Set (300 mOsm/ 1000 mOsm) are used.



3-point calibration curve

### 2-point calibration

Two types of solutions (LOW/HIGH) with a known osmotic pressure are used. \*Recommended when the osmotic pressure of a sample is roughly known. The smaller the concentration range between LOW and HIGH, the more accurate the data will be.



2-point calibration curve

## Measurement method

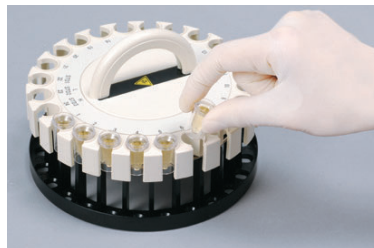
### Turntable specifications

Up to 24 samples can be measured sequentially using the turntable.

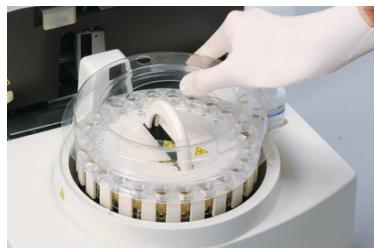
- (1) Prepare sample tubes or sample cups that contain samples.



- (2) Set the sample tubes or sample cups onto the turntable.



- (3) Set the turntable onto the instrument.  
When using sample cups, set the anti-evaporation cover A and B.



Press the No. key to enter the sample number.



Press the start key to start measurement.

Specifications	
Measurement objects	Blood serum, plasma, and urine*1
Measurement items	Osmotic pressure and osmotic pressure ratio of body fluid
Measurement range	0 - 2000 mOsm (Switchable to "0 - 2500 mOsm"*2)
Measurement principle	Freezing-point depression using ultra supercooling
Sample supply	Turntable unit
Measurement precision	CV 1 % or less (200 - 300 mOsm)
Processing speed	2 to 3 minutes per sample
Sample consumption	200 $\mu$ L
Required sample volume	Minimum 200 $\mu$ L (500- $\mu$ L sample cup), Minimum 2 mL (o.d. 12.3 $\times$ height 100 mm sample collection tube)
Sample container	500- $\mu$ L sample cup, sample collection tube (o.d.12.3 $\times$ height 100 mm)
Number of measurement samples	Maximum 24 samples
Calibration	3-point calibration (0, 300, 1000 mOsm : polygonal line approximation),
Display	2-point calibration (any 2 points : logarithmic curve approximation) 24-digit by 2-line LCD
Built-in printer	58-mm width thermal printer paper (24 digits)
Memory capacity	500 measurement results
External output	Compliant with RS-232C standard (Compatible with OM-6050, OM-6040, OM-6030, and OM-6020) Ethernet (option)
Measurement environment	Temperature: 10 - 30 $^{\circ}$ C; Humidity: 20 - 80 % RH (No condensation)
Dimensions	320 (W) $\times$ 460 (D) $\times$ 447 (H) mm (With turntable unit attached)
Weight	Main body: 18 kg, turntable unit: 3 kg
Power requirements	100 - 240 V AC (Max. power line fluctuation of $\pm$ 10 %), 50/60 Hz
Power input	Maximum 160 VA

This product conforms to the EMC Standard IEC61326-2-6:2005 (EN61326-2-6:2006).

\*1: We cannot guarantee a margin of error for measurement with samples other than serum, plasma and urine.

We adopted the freezing point depression method as the measurement principle.

For this reason, we use sodium chloride solution as a reference solution for calibration.

Please note that it is possible that some discrepancies in measurement values could arise when using samples that differ from sodium chloride solution in properties such as viscosity.

\*2: Please contact us in regard to changes in the measurement range.



## Legal manufacturer

**arkray factory, inc.**

1480 Koji Konan-cho, Koka, Shiga-ken 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