"Pocket" Salt Meter PAL-SALT Mohr Instruction Cat No 4251 Manual

Docket SALT METER

Read and follow all safety instructions before operating the instrument.

Zero-setting

*Recommended on a daily basis.

1)Clean the sensor with water or ethyl alcohol. Dry the area with tissues thoroughly.



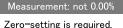
2Press the START button (with nothing on the sensor). Measurement is displayed after







The instrument is zero-set correctly.



1)Press the ZERO button (with nothing on the sensor).

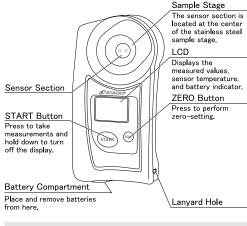


②Zero-setting is complete when "000" blinks 2 times and then stops.



Proceed to measurement.

Parts

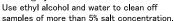


Contents

- •Main unit
- *Instruction Manual (this book) Calibration Report
- AAA batteries
- XAAA alkaline batteries are included. Remove the white strip from the battery compartment before inserting the

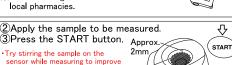
Measurement

(1)Clean the sensor with water or ethyl alcohol. Dry the area with tissues thoroughly.



XUse medical-grade ethanol available from

■ The state of the state local pharmacies.



4 Measurement is displayed after

the repeatability of oily/fatty

samples.

Initial measurements may fluctuate when the sample is hot or cold. Wait for approximately 20 seconds to press the START button. Alternatively, press the START button multiple times until measurements become stable.



Min. 0.6ml

(5) Wipe off the sample. Clean the sensor with water. Dry the area with tissues thoroughly.

*Clean oily residues with ethyl alcohol or mild soap, and then, rinse with water.

XHandle the sensor with care so as not to scratch it.



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Replacing the Batteries

(1) Turn the battery compartment cover counterclockwise to unscrew.



2)Insert batteries, observing the correct polarity. Replace both batteries with two brand new alkaline batteries.



3 Align the tab on the cover with the slot on the body.



4)Turn the battery compartment cover clockwise until it stops.



Error Messages



The sensor was not empty when zero-setting was attemp সূতি The sensor was not setting was attempted. Calibration was attempted with something other than the calibration solution.



The sample's measured value is out of the measurement range. (Try diluting the sample. See 'Making Dilutions.")



The sensor temperature is below the temperature range.



The sensor The sensor temperature is above the temperature range.



The battery is low

Sample Preparation

Drinkable as is (less than 6% Brix) ⇒No dilution is necessary

Liquid condiments (over 6% Brix. over 10% salt, and high in nonsalt components)

Soy sauce. Worcester sauce, etc. ⇒Please dilute.

See "Making Dilutions"

Paste

Mayonnaise, miso paste, ketchup,

⇒Please dilute.

See "Making Dilutions"

Solid food

Pickles, ham, cheese, chips, etc. ⇒Please mince/grind and dilute. See "Making Dilutions"

*Wait for approx. 5 minutes for the solids to settle to the bottom and measure the clear liquid on top.

Measurement Examples

Tomato puree 1.7%

Ketchup 3.0%

BBQ sauce 4.8% Ovster sauce 9.4% Salmon 2.4% Salted cod roe 5.2% Potage 1.2% Miso soup 0.9% Sov sauce 13.0% Mayonnaise 1.6% Pickled radish 3.6% Pickles 1.7% Ham 1.1% Sausage 0.8% Noodle soup 1.4% Curry 1.6% Gouda 0.9% Butter 0.1% Crackers 2.3%

(Test data by ATAGO)

Chips 1.4%



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Checking with Standard Solution

*Recommended on a regular basis.

1)Clean the sensor with water or ethyl alcohol



2Press the START button to turn on the instrument.



3 Press the ZERO button (with nothing on the sensor) to zero-set. "000" blinks 2 times and then stops



(4) Apply a 2.50% standard solution. Approx.

X Standard solution: 2.50g/100g salt water =2.54g/100ml salt water



Measurement:

not 2.54% (± 0.13)

Calibration is required.

5Press the START button. Measurement is displayed after "---.



Measurement: $2.54\% (\pm 0.13)$



The instrument is calibrated correctly,

Calibration

1) Apply a 2.54% standard solution. Turn on the instrument. Press the START and ZERO buttons simultaneously.



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(2) Calibration is complete when "CCC" blinks 2 times and then stops.



*When the readings seem to be erroneous, clean the sensor with water or ethyl alcohol. Dry the area with tissues thoroughly. Repeat the process if necessary. If the measurements are still off, perform calibration.

● Contact ATAGO to purchase 2.50% standard solution. [Parts No.]RE-120250 2.50% NaCl Solution AB250 Approx. 5ml (2.50±0.05g/100g)

●How to make 2.50% standard solution.

*High quality sodium chloride: 500g

Distilled water: 100g

Beaker of 100ml (made of glass or plastics)

Digital scale: Accuracy of ±0.01g min. capacity of 200g

1. Place the beaker on a digital scale and zero the scale.

2. Put 2.50g of sodium chloride in the beaker.

3. Add distilled water until the total weight reaches 100.00g. 4. Remove the beaker from the scale and stir the solution

until the solute is completely dissolved. ※Maintain the ambient temperature at 20°C±5°C.

*Purchase sodium chloride from a local reagent store.

*Make a total weight of no less than 100g to minimize relative error.

XThe standard solution can be made with 2.54g of sodium chloride and 100ml of water.

Offset Function

1) Hold down ZERO while it is turned on.

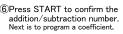
2 Select the offset function and press the START button to confirm.



For addition/subtraction (b) [Range: -10.00 to +10.00]

- 3Press ZERO to select either addition (b) or subtraction (-b).
- 4)Press START to confirm.
- (5)Enter the addition/subtraction number. ZERO to change the number: 0, 1, 2, ···, 8, 9, A, 0, 1, 2···

START to confirm and move to the next decimal place. When the 1st place is confirmed with "A," the number selections for the decimal places are skipped.



"R" appears in the 1st place only, and it means "10 '



No plus sign will

be displayed.

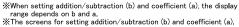
For addition, only

"b" will appear.

For coefficient (a) [Range: 0.01 to 10.00] (7)Enter the coefficient.

Refer to the step 5.

8 Press START to confirm the coefficient.



Safety Precautions

Read and follow all safety instructions before operating the instrument.

•When measuring hazardous materials, use proper safety procedures,

hazardous materials should understand its properties and its safety

If the instrument is dropped or subjected to a strong impact, contact

Before use, carefully read the instruction manual and fully understand

If this instrument is used to measure highly acidic samples, the sensor

section is scratched or damaged, inaccurate measurements will occur.

Only use the specified battery type. Observe proper polarities, properly

Do not leave the instrument in a location exposed to direct sunlight or

Do not change the ambient temperature of the instrument suddenly.

Do not use the instrument where there are excessive amounts of dust.

The instrument is water-resistant, not waterproof, and should not be

•Do not place the instrument where it will be subject to strong

Loosen the battery compartment cover for air transportation.

near a heat source for any extended period of time.

Do not store the instrument in an extremely cool area. Do not set or drop heavy objects on top of the instrument.

When the unit needs to be washed, use cold water at a temperature

section and sample stage may be damaged, resulting in inaccurate

Do not use any metal tools when applying sample to the sensor

section. The metal can damage the sensor section. If the sensor

Do not attempt to repair, modify, or disassemble the instrument.

the function and operation for each part of the instrument.

ATAGO is not liable for any loss and damage caused by the

measurement and use of this instrument.

materials, and clothing to avoid personal injury. Anyone handling

During measuremen

/!\WARNING

∴CAUTION

your supplier for inspection.

requirements

measurements.

submerged.

not exceeding 30°C.

aligning the anodes and cathodes.



Water after 20.41 zero-setting

"b" = addition of 0.30

Making Dilutions (1) Volume ratio

Actual salt concentration = Measurement value × Dilution factor Soy sauce, Worcester sauce, etc. (approx. 30 to 40% Brix)

①Dissolve 10ml of sample in 90.0ml of water. Total volume (Volume ratio: 1:10) 100ml (Water 90ml) Stir until the sample is dissolved completely. Sample 10ml

②Measure the dilution



3Multiply the reading by 10 (dilution factor).

Example: A 10% dilution measures 0.90%



 \times 10 (dilution factor) = 9.0%

The actual salt concentration is 9.0%.

Offset feature use #1

Input a coefficient (a) of 10, and the value multiplied by 10 will be displayed.

Displayed value



Storage and Maintenance



Store the instrument in a dry place away from direct sunlight. Exposure to humidity may cause condensation inside, and exposure to direct sunlight may cause the plastic to warp.



Do not use organic solvents (paint thinner, benzene, gasoline, etc.) on the plastic body case.



Cleaning

Clean and dry the sensor area thoroughly after use, leaving no sample residues or water For oily samples:

Remove oily residues with ethyl alcohol or mild soap, and then, rinse with water.

Storage

Store the instrument away from direct sunlight at a stable temperature with as little fluctuation as possible.

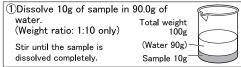


When the O-ring on the battery compartment cover is dirty or damaged, the water resistance may be compromised. Lubricate the O-ring regularly.

Making Dilutions (2) Weight ratio

The actual salt concentration differs from the measurement value multiplied by the dilution rate.

Soy sauce, Worcester sauce, etc. (approx. 30 to 40% Brix)



2)Offset feature use #2





4)Actual salt concentration before dilution is displayed.

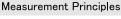
0.0 to 33.0% and the resolution is 0.1.

with the model PAL-ES3.



g/100mla: coefficient

(multiplication) b: addition/subtraction number



This instrument uses the electric conductivity method to measure and display salt concentrations % (g/100ml). When complex samples containing ingredients other than salt are measured, the conductivity readings may be different from readings by other methods.

Always dilute a complex sample to 10% by weight when its Brix exceeds 6%

Brix is a measurement of the total dissolved solids (TDS) in a solution and measured by a refractometer. Check the Brix of you sample with a refractometer. For optimum results, it is recommended to dilute complex samples that are 6% Brix or higher.

Discrepancies with Mohr Method

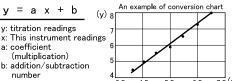
Due to the difference in measurement principles, readings from the conductivity salt meters may not match up exactly with the readings by titration for certain samples. However, correlation between the two testing methods can be seen.

Offset feature use #3

v = a x + b

y: titration readings

Create a conversion chart between the two testing methods.



3.5 4.5 5.5 6.5

ATAGO's instruments are rigorously inspected to ensure each unit meets the highest standards of quality assurance.

Repair and Warranty

XFor this function the same measurement method is used

The instrument is warranted for one year from the date of purchase. This warranty is void if the instrument shows evidence of the following. Send the included batteries as well if they are still in use.

- *Having been disassembled by unauthorized personnel
- Damages to the sensor section and/or sample stage
- •Water damage or having been dropped
- *Having been misused and/or operated outside the environmental specifications
- •Leakage from batteries other than those included with the unit Repair services are available for a fee after the warranty expires. Contact an ATAGO authorized service center for service and support.

Specifications

Measurement range	0.00 to 10.0% (g/100ml) of salt concentration 5.0 to 100°C
Resolution	0.01% for salt concentration of 0.00 to 2.99%
Trosolution	0.1% for salt concentration of 3.0 to 10.0%
	0.1°C
Measurement accuracy	Displayed value ±0.05%
,	(for salt concentration of 0.00 to 0.99%)
	Relative precision ±5%
	(for salt concentration of 1.00 to 10.0%)
	±1°C
Sample temperature	5 to 100°C
Ambient temperature range	10 to 40°C
Sample volume	At least 0.6ml
Measurement time	Approx. 3 seconds
Power supply	Two (2) AAA alkaline batteries
Battery life	Approx. 8,000 measurements
	(when using alkaline batteries)
International Protection class	IP65
Dimensions and weight	55(W)×31(D)×109(H)mm,100g (main unit only)

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