



INSTRUCTION MANUAL

2. ACCESSORIES

Items included with the Hardness Tester:

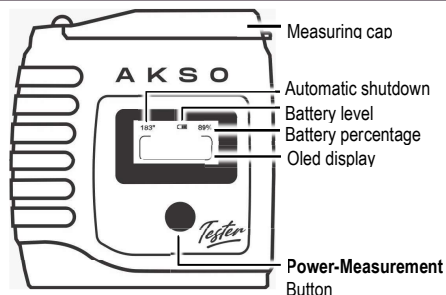
- 2 glass cuvettes with lids (Ø18.8 mm x 68mm) AK4551
- 1 flannel cloth
- 1 plastic carrying case
- 1 instructions manual

Items sold separately:

- Reagent for hardness (48 tests) AK4048
- Verification standard solution kit (0, 100 ppm) AK4210

Before use, check the instrument carefully. If you detect any abnormalities, contact AKSO.

3. OVERVIEW



1. SPECIFICATIONS

- **Measuring range:** 0 to 300 ppm
- **Resolution:** 1 ppm
- **Accuracy:** ± (6 ppm + 6% of reading)
- **Adjust:** 4 points (0, 100, 200, 300 ppm)
- **Sample temperature:** 15 to 35 °C
- **Sample volume:** 10mL
- **Light source:** Light emitting diode
- **Wavelength:** 470nm
- **Measuring cell:** Glass cuvette
- **Automatic shutdown:** After 2 minutes
- **Display:** Oled
- **Languages:** English, Spanish, Italian and Portuguese
- **Operating temperature:** 0 to 50 °C
- **Operating humidity:** 10 to 90 %UR (non-condensing)
- **Power supply:** 9Vdc (1 battery 9V)
- **Dimensions (WxHxD):** 73 x 77 x 40 mm
- **Weight:** 120g (with battery)
- **Method:** Adaptation to the 130.1 Method EPA

4. OPERATING INSTRUCTIONS

MEASUREMENT

Preparation

- 1) Make sure that the temperature of the water sample to be analyzed is between 15 and 35°C to ensure the best accuracy;
- 2) Wash the cuvette 3 to 4 times using ultrapure water to avoid reading deviations;
- 3) Fill the cuvette with 2mL of the Akso reagent for hardness and complete to the indicated line on the body of the cuvette with ultrapure water;
- 4) Close the cuvette with its lid;
- 5) Clean and dry the outer wall of the cuvette, using a wipe or soft towel paper, to eliminate residues, grease and moisture that may interfere with the measurement;

Zero point adjust

- 6) Press the **Power-Measurement** button to turn on the instrument. Will appear **Insert reference**;
- 7) Insert the cuvette into the compartment and close the measurement cover;
- 8) With the instrument in the VERTICAL position, briefly press the button. The sample will adjust at zero point;
- 9) The message: **Analyzing reference** will appear on display;
- 10) Wait until the display shows the message **Insert reagent**;

Reading - Hardness

While **Insert reagent** is on the display:

- 11) Open the measuring cover and remove the cuvette from the compartment;
- 12) Remove the lid from the cuvette and completely discard the liquid, ensuring that it is free of any reagent residue;
- 13) Add 2mL of Akso reagent for hardness and fill to the indicated line on the body of the cuvette with your sample;
- 14) Close the cuvette with its lid and gently shake to dissolve the reagent in the sample;
- 15) Clean and dry the external surface of the cuvette using a soft cloth or paper towel;
- 16) Insert the cuvette into the measurement compartment;
- 17) For better precision, always insert the cuvette in the same position and close measuring cap;
- 18) Briefly press the **Power-Measurement** button, the display will show the message **Analyzing sample** followed by the measurement result in ppm;
- 19) After the measurement is complete, discard the analyzed sample and immediately rinse the glass cuvette with distilled or deionized water.

5. SETTINGS

ACCESS AND NAVIGATION

- To access the settings menu on the instrument: briefly press the **Power-Measurement** button and the screen will show **CONFIGS** and options;
- To navigate the parameters that can be configured, briefly press the button;
- To access a parameter, press and hold the **Power-Measurement** button;
- To confirm a setting, press and hold the button until the device returns to the parameter selection menu;
- To return to a previous display or to measurement mode, select **BACK** and keep pressing the button.

SETTINGS - CONFIGS

ADJUSTMENT – measurement adjustment

- **Manual** – manual adjustment of the reading curve at the points (0, 0.5, 1, 2 ppm).
Note: *Adjustments must be made at all points.*
- **Factory default** – restore the reading curve factory adjustment.

LANGUAGE – language selection

PORTUGUES (portuguese), **ENGLISH, ESPANOL** (espanhol) and **ITALIANO** (italian)

6. MAINTENANCE

BATTERY INSTALATION/REPLACEMENT

When the display displays **Low Battery**, replace the battery as described below:

- 1) Turn off the instrument by holding down the **Power-Measurement** button until the display is switched off;
- 2) Remove the base clamping screw at the bottom of the instrument, using a "Philips" wrench;
- 3) Undock the base of the meter by pulling it carefully;
- 4) Removed the used battery from the compartment and disconnect it from the clip;
- 5) Plug the new battery into the clip and snap it into the compartment;
- 6) Replace the base of the instrument, observing its correct position;
- 7) Replace the Philips screw, tightening it without forcing it.

DISPOSAL OF BATTERIES AND ELECTRONICS



This product contains battery and electronic components. Do not dispose of them with other common household waste. Deliver them to the appropriate collection center in accordance with local guidelines. **Important:** The correct disposal of electronics and batteries prevents negative effects on the environment and on human health!

ERROR MESSAGES

MESSAGE	CAUSE	SOLUTION
Discharged battery	Battery without charge	Replace the battery
Low battery		
Concentration exceeded	Sample outside the measuring range of the instrument.	Perform a new reading within the measuring range of the instrument.
Inverted samples	Error in the measurement procedure.	Perform a new reading following the measurement procedure.
Damaged sensor	Failure to communicate with the sensor.	Contact Akso Technical Support.

Go to the product page on the Akso website and make sure your manual version is up to date.



This instrument comes with a 2-year* warranty against manufacturing defects.

*Legal warranty included
garantia@akso.com.br

