

INSTRUCTIONS for **CHEKMITE pH- 20 Sensor**

The pH-20 is a portable microprocessor based pH meter in a waterproof and chemical resistant case. It features LCD readout providing concurrent display of pH & Temperature, automatic calibration to 2 points, automatic read and automatic temperature compensation plus, a replaceable epoxy body sensor.

Specifications:

Range: 0.0 to 14.0 pH
Resolution: 0.01 pH
Accuracy: ± 0.04 pH
Temp. Compensation: Automatic...
...0 to 50°C.
Environment: 0 to 50°C.
Power Supply: 2 x 3volt Lithium Cells.
(CR-2032)
Battery Life: 200 Hrs. approx.
Auto Off: After 8 minutes.
Dimensions (in): 9.3Lx1.8Wx 1.3D
Weight: 5 Ounces
Compliant with CE directives EN-55011 & EN-55082-1 and waterproof to IP66+.

Unpacking & Conditioning:

1. Remove CHEKMITE from packaging.
2. Locate batteries. To install, remove the two small Phillips screws retaining panel on rear of unit. Ensuring that the positive (+) pole is facing up for each cell, slide the two batteries into the battery compartment. Replace rear panel, being careful to keep the waterproofing sealing gasket in place.
3. Remove meter end cap. Carefully remove adhesive tape and small Wetting Cap, containing KCl, from sensing tip of electrode. Retain this Cap for future long-term storage. Fit Electrode End Protector supplied with unit. Moisten the sponge, located inside the end cap, with pH-7 Buffer. This will ensure the pH-sensing bulb is kept moist during routine storage.
4. For optimum performance always condition the electrode prior to use. To condition, remove end cap and soak the sensing tip of the electrode in pH7.0 buffer for ten (10) minutes.

Automatic Temperature Compensation (ATC):

ATC is employed full time in the calibration & measurement procedures. However, for optimum accuracy it is recommended that

calibration buffers & sample solutions be at the same temperature. The sample/buffer temperature is continuously displayed on the LCD.

Calibration: *Daily calibration is recommended.*

Either a 1 or 2-point calibration is possible using 7.00 & 4.00, or 7.00 & 10.01 pH buffers. In automatic mode, end-point detection software will detect the sensor response plateau. It is important to remember that temperature affects hydrogen activity, causing the buffer values to change. The pH-20 automatically compensates and displays corrected values.

To select calibration mode...

1. Press the [ON/OFF] key.
2. Press the [CAL] key. With the <CAL> icon flashing, press & HOLD the [READ] key for >3seconds to select either MANUAL or AUTO calibration. A <circle A> icon will be displayed when in AUTO-CAL mode.
3. Press the [ON/OFF] key.

Automatic Calibration (<circle A> icon displayed)

1. Remove meter end-cap & press [ON/OFF] key, to turn meter ON.
2. Immerse tip of sensor in pH7.00 buffer to a depth of approx. 1".
3. Press [CAL] key; a "beep" will be heard and the <CAL> icon will flash while endpoint is being tracked. At endpoint the display will "freeze" to 7.00, a "beep" will be heard and a <square 7> icon will be displayed, indicating auto-calibration to pH7.00.
4. Rinse sensor tip with distilled or de-ionized water and blot to remove excess water.
5. For **two-point** calibration repeat steps 2 through 4 using pH4.00 or 10.01 buffer. The readout will "freeze" to the selected buffer value and a <square 4> or <square 10> icon will display alongside the <square 7> icon indicating auto-calibration to a second point.

Manual Calibration (<circle A> icon NOT displayed)

1. Remove meter end-cap & press [ON/OFF] key, to turn meter ON.
2. Immerse tip of sensor in pH7.00 buffer to a depth of approx. 1".
3. Press [CAL] key a "beep" will be heard; wait for readout to stabilize, then press the [READ] key. A "beep" will be heard, the display will "freeze" to 7.00 and a <square

7> icon will be displayed, indicating calibration to pH7.00.

4. Rinse sensor tip with distilled or de-ionized water and blot to remove excess water.
5. For **two-point** calibration repeat steps 2 through 4 using pH4.00 or 10.01 buffer. When pressing the [READ] key the readout will "freeze" to the selected buffer value and a <square 4> or <square 10> icon will display alongside the <square 7> icon, to indicate calibration to a second point.

Error Codes:

E1 & E2 *Wrong buffer or unfit sensor during calibration procedure. Change buffer and/or clean sensor. Repeat conditioning procedure.*

E3 *Out of range temperature reading or defective sensor.*

Er *Calibration Buffer or Sample beyond instrument range.*

Sample Measurement Procedure:

Manual or Automatic reading of sample value is possible. In automatic mode end-point detection is employed to detect the sensor response plateau. To select READ mode...

1. Press & HOLD the [READ] key for >3seconds at any time during the READ cycle to select either MANUAL or AUTO read. A <circle A> icon will be displayed when in AUTO-READ mode.

AUTO-READ (<circle A> icon displayed):

1. Remove meter end-cap & press the [ON/OFF] key.
2. Immerse tip of sensor in sample solution, to a depth of approx. 1".
3. Press [READ] key; a "beep" will be heard and the display will change towards the pH value of sample. When measurement end-point is sensed a "beep" will be heard and the display will "freeze", indicating the final value.
4. Rinse sensor tip with distilled or de-ionized water & blot to remove excess water.
5. Repeat steps 2, 3 & 4 for further samples.

MANUAL (<circle A> NOT displayed)

1. Remove meter end-cap & press the "ON/OFF" key, to turn meter ON.
2. Immerse tip of sensor in sample solution, to a depth of approx. 1".
3. Press [READ] key a "beep" will be heard and the decimal point will flash; display will change towards pH value of sample.

When reading stabilizes, press [READ] key again, a "beep" will be heard and the display will "freeze"; note value.

4. Rinse sensor tip with distilled or de-ionized water & blot to remove excess water.
5. Repeat steps 2, 3 & 4 for further samples.

Note: To conserve battery life, meter will automatically turn off after 8 minutes if no key is pressed; calibration data is retained in memory.

Care and Maintenance Tips

- A Test Plug is provided in the meter kit to assist in testing of the electronic meter module in cases where error codes are observed. To use...

1. Remove the batteries for several seconds, then re-install. This will clear old calibration information.
2. Remove electrode by un-screwing retaining ring and pulling electrode straight out of connector.
3. Replace with Test Plug.
4. Press [ON/OFF] key.
5. Press [CAL] key. Display should indicate 7.00 if all is OK.
6. Replace electrode; if problem still persists a replacement electrode is required.

- For storage, moisten sponge in the bottom of the end cap with a small amount of 7.00 buffer. **NEVER** use distilled or de-ionized water in the cap.

- If the tip of the sensor is left dry, it must be rejuvenated. Place sensor tip in 7.00 or 4.00 buffer for 1 hour.

- Samples high in protein fats or oils will coat the sensor measuring surfaces. Keep the sensor clean by rinsing with a solution of half alcohol and half water after each sample. **DO NOT** allow the sensor to soak in this solution.

Electrode Replacement:

- Un-screw & remove the retaining nut at the top of the electrode body.
- Unplug electrode from CHEKMITE body by pulling straight out.
- Replace with new electrode and refit retaining nut, being careful to include "O" rings as originally positioned.

Calibration Buffers:

The values for 3 standard Buffer Sets are programmed into software. The values @ 25°C are provided below. The actual values will vary with temperature; these are automatically compensated for and displayed by the CHEKMITE pH-20.

Set #1: 4.00, 7.00 & 10.01pH (USA: NIST)

Set #2: 4.01, 7.00 & 9.21pH (Europe)

Set #3: 4.01, 6.86 & 9.18 (DIN 19266)

The default set (i.e. as shipped from the factory) is **Set #1**.

To change calibration set...

1. Press [ON/OFF] key while pressing & holding the [CAL] key for >3 seconds. Display will indicate "b = 1". Release [CAL] key.
2. Repeat presses of the [CAL] key will cycle through the 3 buffer sets. ie. "b=1" to "b=2" to "b=3" to "b=1", etc.
3. When buffer set of choice is displayed, press [READ] key to select.
4. Press [ON/OFF] key.

Optional Accessories:

476049 Replacement Sensor.

473676 Buffer Sachet Assortment (32/pk).

478574 Buffer Rainbow Pk. 4, 7, 10pH
(2-500mL bottles each/case).

470530 Replacement Batteries (2/pk).

Warranty:

NOVA-pH warrants this product to be free from defects in materials and workmanship for a period of six (6) months from the date of purchase.

THIS WARRANTY IS MADE IN LIEU OF ALL OTHER WARRANTIES EXPRESSED OR IMPLIED INCLUDING THE WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. NOVA-pH SHALL NOT BE LIABLE FOR ANY LOSS OR DAMAGES ARISING FROM THE USE OF THESE PRODUCTS NOR FOR CONSEQUENTIAL DAMAGES OF ANY KIND.

In the event that this product fails under normal laboratory conditions within the specified period because of a defect in material or workmanship, NOVA-pH will, at its option, repair or replace the product. Contact NOVA-pH Customer Service for return authorization and shipping instructions at 1 866 664 6682.

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