

pH Accessory Guide



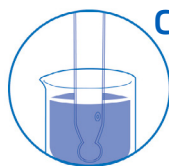
Clean Regularly

The most common cause for pH measurement inaccuracies is an unclean or improperly cleaned electrode. A properly cleaned electrode will ensure that the sensor tip is reading correctly, the junction has optimal flow, and calibration will be accurate.

Visit hannainst.com/cleaning

Use these cleaning solutions for optimal results.

Item#	Application	Price
HI7061L	General Purpose	\$14
HI7073L	Proteins	\$25
HI70630L	Acid Cleaning for Meat, Grease, and Fats	\$28
HI70631L	Alkaline Cleaning Solution for Meat, Grease, and Fats	\$28
HI7074L	Inorganic Substances	\$25
HI7077L	Oil and Fats	\$25
HI70635L	Wine Deposits	\$28
HI70640L	Milk Deposits	\$28
HI70641L	Cleaning and Disinfection for Dairy	\$28
HI70642L	Cheese residues	\$28
HI70663L	Soil Deposits	\$28
HI70670L	Humus Deposits	\$28



Calibrate Often

Calibrate to correctly maintain electrode operation for accurate and reproducible readings. Hanna carries three lines of calibration solutions: HI50XX are certified technical

buffers that range from 1.00 to 13.00 pH and an accuracy of +/- 0.01 pH. HI60XX are certified millesimal buffers that range from 1.000 to 13.000 pH and an accuracy of +/- 0.002 pH. Finally, HI70XX are general purpose calibration buffers that range from 1.68 pH to 10.01 pH. Hanna buffers are standardized with high precision meters calibrated to NIST references. Hanna carries buffers in 20mL Sachet, 230mL, 500mL, 1L, and 1 Gallon sizes. Most buffers are available with certificates, in FDA bottles, and have a shelf life of up to 5 years.

Visit hannainst.com/calibration

Use these buffers for your calibration

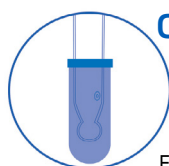
pH Value @25C*	HI50XX	Price	HI60XX**	Price	HI70XX	Price
1.68	HI5016	\$33	HI6016 (1.679 pH)	\$28	HI7001L	\$24
3.00	HI5003	\$22	HI6003 (3.000 pH)	\$28	-	-
4.01	HI5004	\$22	HI6004 (4.010 pH)	\$28	HI7004L	\$14
6.86	HI5068	\$22	HI6068 (6.862 pH)	\$28	HI7006L	\$14
7.01	HI5007	\$22	HI6007 (7.010 pH)	\$28	HI7007L	\$14
9.18	HI5091	\$22	HI6091 (9.177 pH)	\$28	HI7009L	\$14
10.01	HI5010	\$22	HI6010 (10.010 pH)	\$28	HI7010L	\$14

Hanna Recommended Kits

HI54710	pH 4.01, pH 7.01, pH 10.01	\$61
HI54710-10	pH 4.01, pH 7.01, pH 10.01, HI70300L	\$77
HI54710-11	pH 4.01, pH 7.01, pH 10.01, HI70300L, HI7061L	\$90

*Codes are for 500 mL bottles

** For pH readings of 0.001 millesimal (HI60XX) buffers must be used



Condition Always

Keep the glass bulb and junction of your pH electrode hydrated; this reduces junction clogging and improves response times. Storage solution is ideal, however if it is not available 4.01 or 7.01 pH buffers can be used. Never store electrodes in deionized (DI), RO, distilled, pure, or demi water. Use HI70300L electrode storage solution to properly maintain your electrode. Visit hannainst.com/storage

Electrolyte fill solutions are required for refillable electrodes. Keeping a proper fill level ensures proper head pressure to keep the liquid junction flowing. Loosen the cap when performing calibration or a measurement to improve head pressure.

Use HI7071L for single junction electrodes or HI7082 for double junction pH electrodes. Visit hannainst.com/fill



Choose Stirrer

The response time and accuracy of a reading may be impacted when a sample is not agitated. Hanna recommends using magnetic stirrers to ensure that the pH buffer or sample is

mixed well. The movement of the solution will improve the response time of the electrode in the solution.

Visit hannainst.com/stirrer

Use these stirrers for calibration and sample testing

Item #	Type	Price
HI190M	Square stirrer for up to 1-liter capacity	\$99
HI181-1*	Round stirrer with electrode arm for up to 1-liter capacity	\$150
HI180-1*	Round stirrer for up to 1-liter capacity	\$110

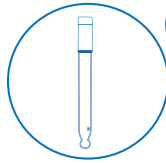
* Available in a variety of colors

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pH Accessory Guide



Choose Electrode

Most meters come with general purpose electrodes. Although these work well for many applications, there are a number of applications that require specialized electrodes

such as food, beverage, cosmetics, water treatment, plating etc. Several factors play into choosing the proper electrode: sample temperature, viscosity, sample preparation, and sample composition are all important to consider. Before purchasing the appropriate electrode please be sure to check the type of connector that your meter accepts: BNC, DIN, Quick DIN, 3.5 mm digital, BNC + Pin, Screw or T-Type. Visit hannainst.com/electrode

Use these pH electrodes for your samples

Item #	Application	Connector type	Price
HI1131X	General Purpose	BNC, BNC+Pin, DIN, digital	\$127-159
HI1230X	General Purpose/Field	BNC, DIN, digital	\$92-112
FC202X	Milk, yogurt, dairy, meat, semi-solid foods	DIN	\$171-175
FC200X	Milk, yogurt, dairy, meat, semi-solid foods	BNC, DIN, digital	\$157
HI1332X	Chemicals, field applications, QC	BNC, BNC+Pin, DIN	\$89-121
HI1043X	Hydrocarbons, paints, solvents, sea water, strong acids/bases, tris buffer	BNC, BNC+Pin, digital	\$175-190
HI1048X	Wine, juice	BNC, BNC+Pin, DIN, digital	\$197-208
FC232X	Meat, cheese, semi solid food samples	DIN, digital	\$216-221
HI1053X	Fats, creams, soil samples, potable water, emulsion, low conductivity solutions, semi-solid samples	BNC, BNC+Pin, digital	\$163-177
HI1083X	Biotechnology, Samples <100uL	BNC, BNC+Pin	\$302-334
FC210X	Yogurt, Creams	BNC	\$180-185
HI73127X	General purpose	Pin, for use with HI9812X meters	\$55
HI1296X	Wastewater	DIN	\$172



Choose Meter

The type of meter you use will have an impact on the readings you obtain.

Hanna manufactures

pH meters in different categories: testers, portable, benchtop, and process. Each meter has different benefits and price points.

* CAL Check™ is a diagnostics system that ensures accurate pH readings every time. By alerting users to potential problems during the calibration process, the Cal Check™ system eliminates erroneous readings due to dirty or faulty pH electrodes or contaminated pH buffer solutions during calibration. The meter will display the electrode condition and response times and make recommendations accordingly.

Visit hannainst.com/tester
Visit hannainst.com/portable
Visit hannainst.com/bench

Use these meters for your testing

Item #	Type	Application	Description	Price
HALO*	Bluetooth electrode	Various	HALO pH electrode with Bluetooth Smart technology interfaces with your iPhone, iPad, or iPod	\$160-225
HI98128	Tester	General Purpose Tester	Waterproof tester with a replaceable electrode, ideal for field applications and basic pH testing	\$98
HI9814	Portable	Agriculture/ Hydroponics	Quick Calibration mode to calibrate pH, EC/TDS. Amplified Electrode to resist electrical interference	\$199
HI991XX	Portable	Application specific	Waterproof portable meter with two button operation. Applications include; Soil, Plating, Milk, Yogurt, Cheese, Food & Dairy, Drinking Water, Beer, Wine, Meat, Paper, Leather, Skin.	\$315-450
HI9819X*	Portable	Industrial, Lab and Field Use	Waterproof and rugged, it's the most popular portable meter Hanna manufactures. The HI9819X series comes with a case that has all accessories needed for measurement, logs up to 300 records, calibrates up to 5 points, and has Cal Check. The HI98191 is able to use any BNC electrode.	\$495-565
edge	Portable,	Lab, Industrial, Field,	The best Hybrid meter in the market. Performs up to	\$359-409
HI2002/	Benchtop,	Education, Food	5-point calibration. CAL Check, .001 pH resolution,	
HI2020*	Wall-Mount Hybrid		capacitive touch tablet style meter. Transfer data to a computer or USB.	
HI522X*	Benchtop	Lab, Education	Available in 1 or 2 channel, HI522X are research grade meters that allow for real time graphing, 5-point calibration, PC connectivity, Cal Check™, and are fully customizable.	\$710-910

Hanna has put together this guide to serve as a quick reference tool for best practices.

Always remember to consult the instruction manual or contact us for detailed instructions for your specific needs.

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