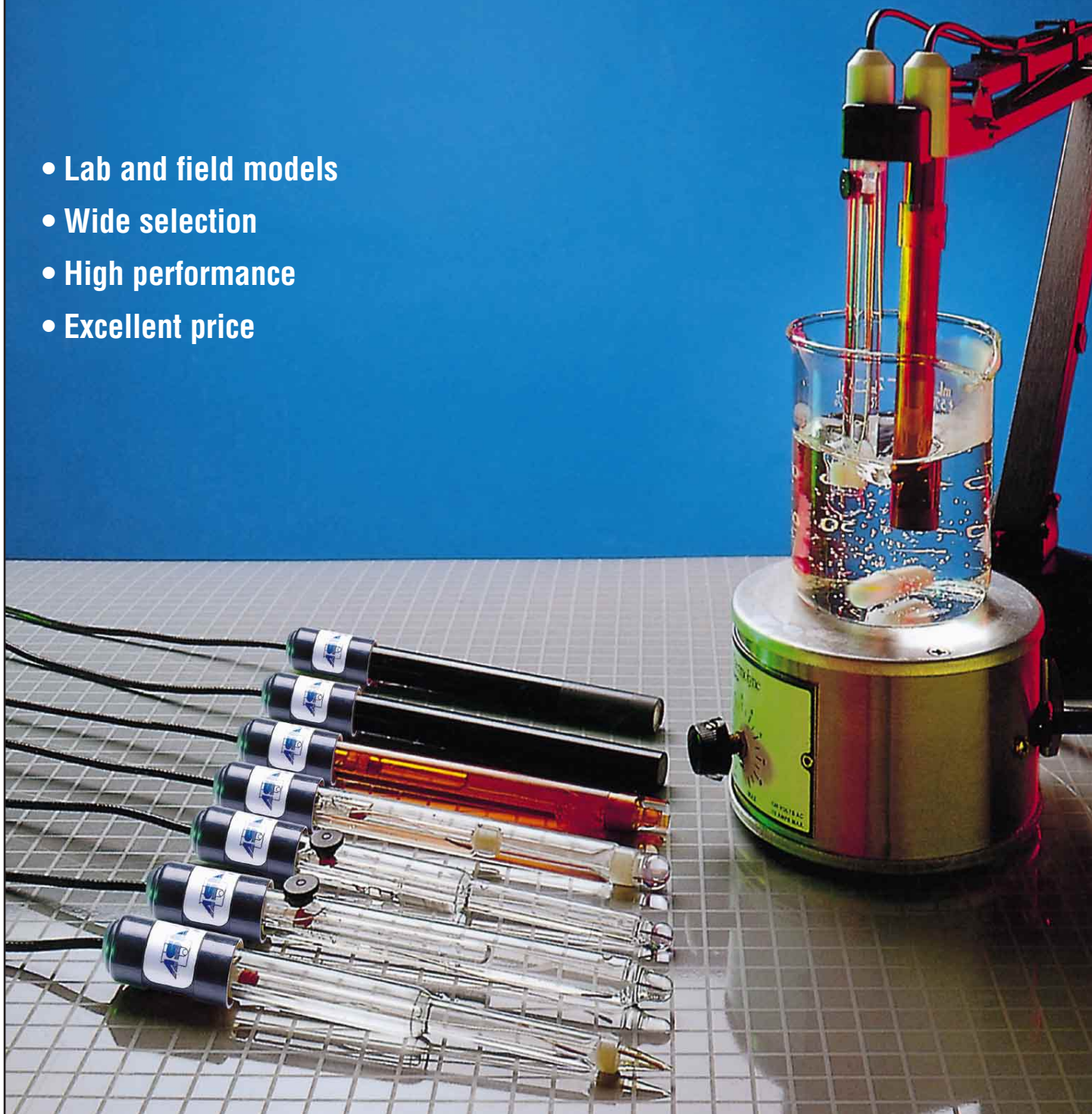


pH and Reference Electrodes

- Lab and field models
- Wide selection
- High performance
- Excellent price



Analytical Sensors, Inc.
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In the laboratory, out in the plant or in the field, analysts are faced with many different pH measurement requirements. In most cases, the sample and how it is measured determines the style or type of pH electrode required to perform the measurement reliably, precisely and quickly.

Analytical Sensors, Inc. offers many types and styles of pH electrodes, from research grade electrodes to low cost, no maintenance styles plus the premium performance ASI pHAstrode and Fastfil combination pH electrodes.

This catalog is divided into sections. Each section lists specific styles of electrodes. Each style is offered in several configurations. If you do not see the style you are looking for, contact ASI.



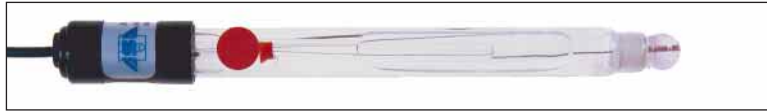
ASI pH electrodes are made to exacting standards. Every electrode is tested for response speed, slope, E_0 , isolation and drift. You can rely on your ASI pH electrode to deliver dependable measurements now and well into the future.

All ASI pH electrodes are furnished standard with a 3 foot low noise coaxial cable and BNC connector. Cable lengths up to 20 feet are available. A selection of connector styles are available, as well. Contact ASI for pricing and availability.

Economy and Research Grade pH Electrodes



H011



H014



HORJ



H035

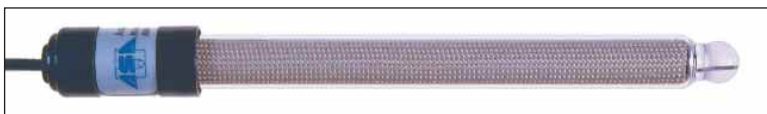
Economy pH Electrodes

The ASI Economy line of pH electrodes provide reliable, accurate performance. Popular in routine pH determinations, these models come in several designs. Featuring removable bulb guards and replaceable reference junction elements, the ASI economy line offers high performance at attractive prices. Most models are shipped with a soaker bottle which guarantees high performance out of the box without conditioning.

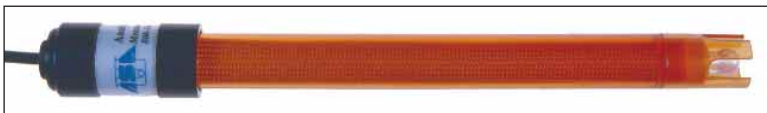
ASI P/N	Description	Range	Construction	Size	Temp range
H031	General purpose, combo	0-14 pH	Plastic body, gel filled, removable guard	12 mm x 150 mm	0-80°C
HORJ	General purpose, combo	0-14 pH	Plastic body, gel filled, replaceable junction	12 mm x 150 mm	0-80°C
H035	General purpose, combo	0-14 pH	Epoxy body, gel filled, fixed guard	12 mm x 150 mm	0-80°C
H035NA00D	General purpose, combo	0-14 pH	Epoxy body, gel filled fixed guard, double junction	12 mm x 150 mm	0-80°C
H011	General purpose, combo	0-14 pH	Glass body, gel filled	12 mm x 150 mm	0-100°C
H014	General purpose, combo	0-14 pH	Glass body, refillable	12 mm x 150 mm	0-100°C



H006



H002



H001

Research Grade pH Electrodes

This premium performance series of ASI pH electrodes features low sodium error, high precision performance in applications where high accuracy and reproducibility are required. Use the model H002GS in samples which contain organics or are weakly buffered (low conductivity). Select an appropriate reference electrode (see the reference electrode section) for use with these pH (mono) half cells.

ASI P/N	Description	Range	Construction	Size	Temp range
H001	Research grade, mono	0-14 pH	Plastic, bulb guard	12 mm x 150 mm	0-80°C
H002	Research grade, mono	0-14 pH	Glass, high temp	12 mm x 150 mm	0-100°C
H002GS	High purity water, mono	0-12 pH	Glass, low impedance	12 mm x 150 mm	0-100°C
H006	Research grade, combo	0-14 pH	Glass, refillable	12 mm x 150 mm	0-100°C

pHastrobe and FastFil Electrodes



HO58QA



HO59GA



pHastrobe Flushable Junction Series

The ASI pHastrobe combination pH electrode offers high performance, rapid, drift free pH measurements in a variety of sample types. The ASI pHastrobe is designed to allow complete electrode disassembly for thorough cleaning after use in sticky, oily, greasy samples. The double junction reference construction ensures reliable, drift free performance regardless of sample matrices. Featuring a unique reference junction design, the ASI pHastrobe reference junction can be flushed with a quick, easy press of the cap. This restores like new performance after measuring the most difficult samples. The ASI pHastrobe provides high resolution, drift free performance in a wide variety of sample types as well as in titration applications. Select the HO58QS version for non-aqueous samples or when titrating fuels, lubricants or low ionic strength liquids.

ASI P/N	Description	Range	Construction	Size	Temp range
HO58QA	pHastrobe, combo	0-14 pH	Epoxy, refillable	12 mm x 150 mm	0-80°C
HO58QS	pHastrobe, combo	0-12 pH	Epoxy, refillable, low impedance bulb	12 mm x 150 mm	0-80°C
HO59GA	pHastrobe, combo	0-14 pH	Glass body, refillable	12 mm x 150 mm	0-100°C
HO59GS	pHastrobe, combo	0-12 pH	Glass body, refillable, low impedance bulb	12 mm x 150 mm	0-100°C



HODG



HODA



FastFil Series 3-in-1 Electrodes

Fast, accurate, reproducible pH measurements are now possible with the ASI combination FastFil 3-in-1 temperature compensated pH electrodes. By placing the temperature element in intimate contact with the sample, rapid correct temperature compensation is assured, thereby increasing pH measurement speed and accuracy.

Filling or flushing the FastFil electrode is quick and easy. The electrode cap design allows you to fill the electrode with reference solution and vent trapped air from the electrode body. The vented cap ensures the fill solution goes into the electrode, not all over your hand.

The FastFil cap design can be assembled onto most of the refillable models listed in this catalog. Please contact ASI for details.

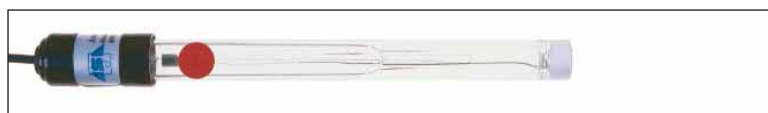
pH Electrodes



H05D



H03Y



H026



H016



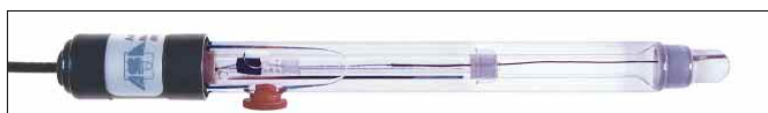
H07B

Specialty pH Electrodes

These ASI pH electrode models are used in applications where a standard design is not suitable. Spear styles are for semi-solids such as cheese, soils, processed foods or where samples must be penetrated to take the measurement. Select flat styles for surface pH measurements on agar plates, skin or where sample volume is limited. Semi-micro styles are used for determining pH in small sample volumes, test tubes or narrow necked vessels.

Additional models with various bulb styles or sensing glass, and different working length (insertion length) are available. Contact ASI for details.

ASI P/N	Description	Range	Construction	Size	Temp range
H012	Spear tip, combo	2-12 pH	Glass, gel filled	12 mm x 150 mm	0-100°C
H016	Spear tip, combo	2-12 pH	Glass, refillable	8 mm x 150 mm, 65 mm insertion	0-100°C
H026	Flat, combo	1-12 pH	Glass, refillable	12 mm x 150 mm	0-100°C
H028	Flat, combo	1-12 pH	Epoxy, gel filled	12 mm x 150 mm	0-100°C
H05D	semi-micro, combo	0-14 pH	Glass, refillable	8 mm x 210 mm, 120 mm insertion	0-100°C
H07B	semi-micro, combo	0-14 pH	Epoxy, gel filled	6 mm x 230 mm	0-80°C



H014GT



H011GT

Rugged Tip, Hard Bulb pH Electrodes

The ASI Hard Bulb pH electrode is the right choice where glass construction is desirable but fragile electrodes may be broken. The ASI Hard Bulb pH electrode will tolerate contact with the stir bar during stirring as well as drops into the beaker or onto the bench. The ASI Hard Bulb is useful in samples which are high in abrasive solids. The ASI Hard Bulb model is a tough, high performance pH electrode that will tolerate rough handling.

Hard Bulb with different body styles are available upon request.

ASI P/N	Description	Range	Construction	Size	Temp range
H014GT	General purpose, combo	2-12 pH	Glass, refillable	12 mm x 150 mm	0-100°C
H011GT	General purpose, combo	2-12 pH	Glass, gel filled	12 mm x 150 mm	0-100°C

pH and Reference Electrodes



HO23

pH Electrodes for ASTM Titrations*

The ASI line of pH electrodes for ASTM titrations features a high flow ground joint reference junction and special construction for reliable endpoint determinations. These ASI pH electrode models produce sharp, well defined endpoints when used in the titration of routine aqueous samples as well as titrations in fuels, lubricants and other non-aqueous samples. The ground glass, taper sleeve reference design provides reliable reference flow, even in oily, high solids, high viscosity samples. The reference sleeve is retractable to allow thorough maintenance. These electrode styles are referenced in many ASTM petroleum titration procedures.

NOTE: Connector styles differ with the brand and model of titrator. Contact ASI to determine the connector required.

* Also see pHastrobe series for titration applications.

ASI P/N	Description	Range	Construction	Size	Temp range
HO22	Sleeve, combo	1-12 pH	Glass, refillable, double junction, low impedance bulb	8 mm x 150 mm, 65 mm insertion, 15 mm sleeve OD	0-100°C
HO23	Sleeve, combo	1-14 pH	Glass, refillable	6 mm x 150 mm, 65 mm insertion, 11 mm sleeve OD	0-100°C



F025



F012

Reference Electrodes

ASI reference electrodes feature reliable, stable, drift free performance in a variety of sample types. The silver/silver chloride models offer high stability and should be used for most sample types. The calomel model is ideal for use in Tris buffers or in the presence of organics, sulfides or samples which will complex silver. The double junction varieties offer high stability, eliminating Ag+ interference, and can be used with any ion selective electrode. Glass versions tolerate cleaning with solvents after measuring foods, lubricants or oily, greasy samples. Epoxy models are rugged and are used in most routine pH applications.

*Recommended for use with all mono ISEs

ASI P/N	Description	Reference	Construction	Size	Temp range
F001	Single junction	Ag/AgCl	Epoxy, gel filled	12 mm x 150 mm	0-80°C
F012GX00C	Single junction	Calomel	Glass, refillable	12 mm x 150 mm	0-80°C
F012GX00L	Double junction	Ag/AgCl	Glass, refillable	12 mm x 150 mm	0-100°C
F025	Double junction	Ag/AgCl	Epoxy, refillable, flushable junction	12 mm x 150 mm	0-100°C

Electrode Maintenance and Calibration Solutions



Electrode Maintenance and Calibration Solutions

All ASI electrode maintenance and calibration solutions are made to strict industry standards. These products include calibration buffers, reference filling solutions, cleaning solutions and storage solutions.

Buffer Solutions

ASI P/N	Description	Color Code	Size
SD1001-2	pH 4.01 buffer	Red	16 oz. plastic bottle
SD1001-3	pH 4.01 buffer	Red	1 gal. plastic bottle
SD1002-2	pH 7.00 buffer	Green	16 oz. plastic bottle
SD1002-3	pH 7.00 buffer	Green	1 gal. plastic bottle
SD1003-2	pH 10.01 buffer	Blue	16 oz. plastic bottle
SD1003-3	pH 10.01 buffer	Blue	1 gal. plastic bottle

*All buffer values are stated at 25°C.

Reference Filling Solutions

ASI P/N	Description	Size	Notes
RF0001-1	4M KCl	4 oz. plastic bottle	For use in Calomel reference and double junction reference, D/J combo pH electrodes, some ISE determinations
RF0001-1A	4M KCl	2 - 4 oz. plastic bottles	For use in Calomel reference and double junction reference, D/J combo pH electrodes, some ISE determinations
RF0002-1	4M KCl w/Ag/AgCl	4 oz. plastic bottle	For use in single junction reference, combo pH electrodes
RF0002-1A	4M KCl w/Ag/AgCl	2 - 4 oz. plastic bottles	For use in single junction reference, combo pH electrodes
RF0007-1	10% KNO ₃	4 oz. plastic bottle	For use in pHastrobe, double junction reference, D/J combo pH electrodes and some ISE determinations
RF0007-1A	10% KNO ₃	2 - 4 oz. plastic bottles	For use in pHastrobe, double junction reference, D/J combo pH electrodes and some ISE determinations

Cleaning and Storage Solutions

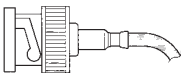
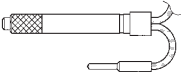






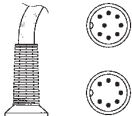

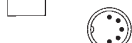
ASI P/N	Description	Size	Notes
CS0002-1	Electrode cleaning solution	16 oz.	Used to clean and rejuvenate slow or dirty pH electrodes
CS0001-2	Electrode storage solution	16 oz.	For storage of pH electrodes. Helps maintain response speed and longevity of pH electrodes



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Connector List

Various connectors are available at ASI. Please Specify when ordering.

Connector	Description	Code
	BNC connector	BX
	U.S. standard with pin for combination electrodes	AP
	U.S. standard with for mono electrode	AX
	Radiometer	RX
	3.5 mm phone plug	BF
	2.5 mm phone plug	B2
	Pin plug	DX
	Banana plug	BE
	5 pin DIN (180°)	HJ
	5 pin DIN (240°)	H5
	7 pin DIN	H7
	8 pin DIN	H8



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