ARTISAN®
TECHNOLOGY GROUP

Your **definitive** source for quality pre-owned equipment.

Artisan Technology Group
(217) 352-9330 | sales@artisantg.com | artisantg.com

Full-service, independent repair center
with experienced engineers and technicians on staff.

We buy your excess, underutilized, and idle equipment
along with credit for buybacks and trade-ins.

Custom engineering
so your equipment works exactly as you specify.

- Critical and expedited services
- In stock / Ready-to-ship
- Leasing / Rentals / Demos
- ITAR-certified secure asset solutions

Expert team | Trust guarantee | 100% satisfaction

All trademarks, brand names, and brands appearing herein are the property of their respective owners.

Find the *VWR sympHony SP20* at our website: ***Click HERE***

VWR™ INTERNATIONAL

VWR™ sympHony™ Electrochemistry Meters, Electrodes and Solutions

Basic and advanced meters and electrodes for all your application needs









sympHony™

Three-Year Limited Warranty▲ on Meters

Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

VWR INTERNATIONAL™

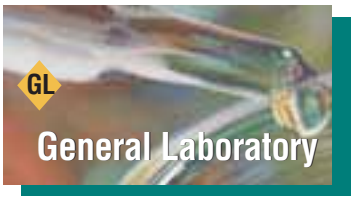




Use the chart below to select the appropriate meter for your application:

Life Science/ Pharmaceutical: LS/P
Environmental: EN
Food and Beverage: FB
General Laboratory: GL





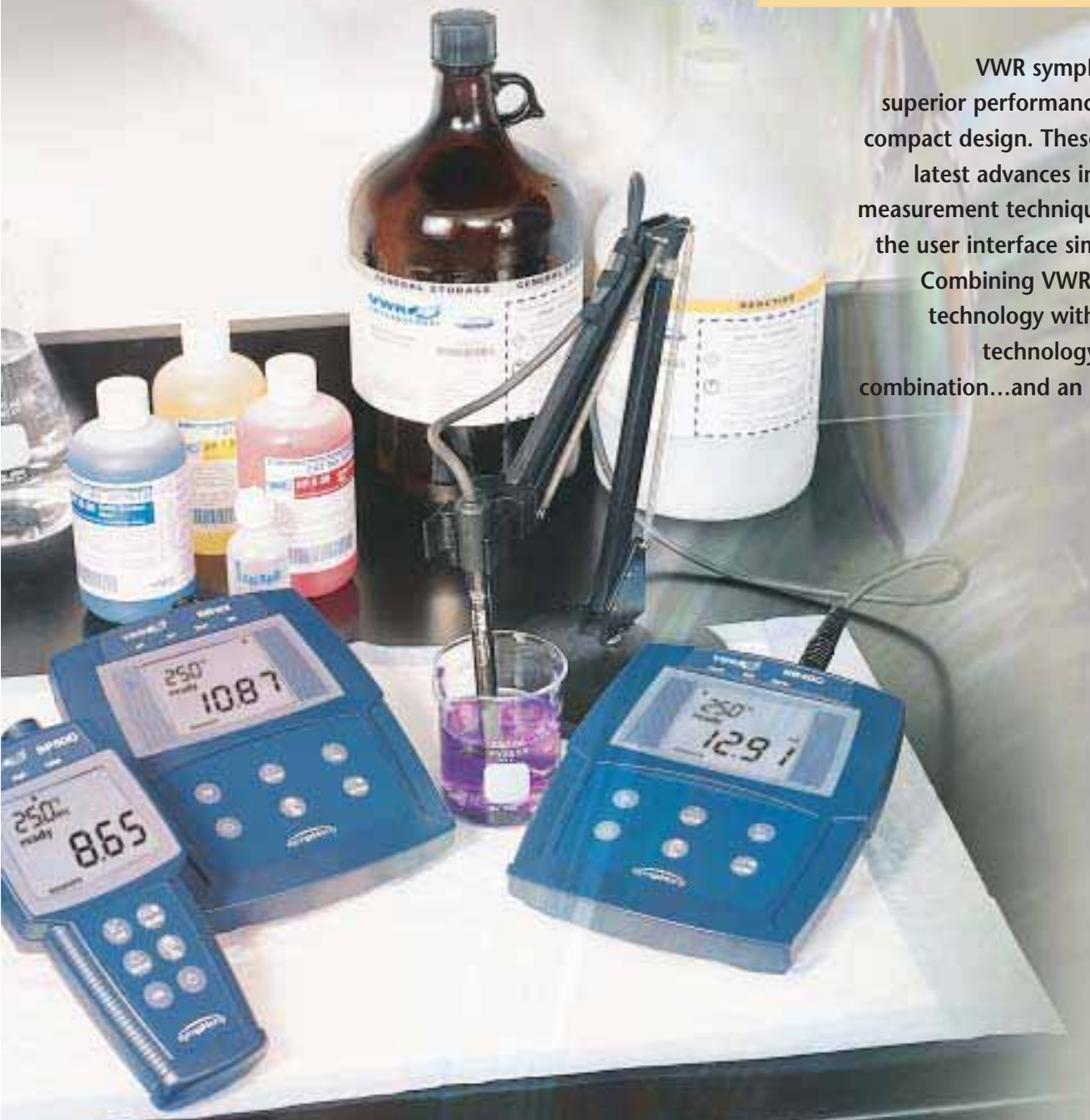
Description	Cat. No.	Page	LS/P	EN	FB	GL
VWR™ sympHony™ Primary Package	14236-074	4			X	X
VWR sympHony University Package	14236-076	4	X			
VWR sympHony Life Science Package	41799-076	5	X			
VWR sympHony Environmental Laboratory Package	41799-078	5		X		
VWR sympHony Environmental Field Package	41799-080	5		X		
VWR sympHony SR60IC Meter Only	14002-752	6	X	X	X	X
VWR sympHony SR60IC Meter Kit	14002-750	6	X	X	X	X
VWR sympHony SR40C Meter Only	14002-744	6	X	X		X
VWR sympHony SR40C Meter Kit	14002-742	6	X	X		X
VWR sympHony SR30I Meter Only	14002-748	6	X	X	X	X
VWR sympHony SR30I Meter Kit	14002-746	6	X	X	X	X
VWR sympHony SB50D Meter Only	14002-740	8		X		X
VWR sympHony SB50D Meter Kit	14002-738	8		X		X
VWR sympHony SB40C Meter Only	14002-736	8	X		X	X
VWR sympHony SB40C Meter Kit	14002-734	8	X		X	X
VWR sympHony SB30I Meter Only	14002-732	8		X	X	X
VWR sympHony SB30I Meter Kit	14002-730	8		X	X	X
VWR sympHony SB21 Meter Only	14002-728	8	X	X	X	X
VWR sympHony SB21 Meter Kit	14002-726	8	X	X	X	X
VWR sympHony SB20 Meter Only	14002-724	8	X	X	X	X
VWR sympHony SB20 Meter Kit	14002-722	8	X	X	X	X
VWR sympHony SP50D Meter Only	14002-718	10		X		X
VWR sympHony SP50D Meter Kit	14002-716	10		X		X
VWR sympHony SP40C Meter Only	14002-714	10	X	X	X	X
VWR sympHony SP40C Meter Kit	14002-712	10	X	X	X	X
VWR sympHony SP30I Meter Only	14002-710	10		X	X	X
VWR sympHony SP30I Meter Kit	14002-708	10		X	X	X
VWR sympHony SP21 Meter Only	14002-706	10		X	X	X
VWR sympHony SP21 Meter Kit	14002-704	10		X	X	X
VWR sympHony SP20 Meter Only	14002-702	10		X	X	X
VWR sympHony SP20 Meter Kit	14002-700	10		X	X	X
VWR sympHony Field Case	14002-720	10		X		

vwr.com
1.800.932.5000

VWR™ sympHony™ Advanced Meters

Quality manufactured electrochemistry measurement systems from a name you trust

VWR sympHony meters offer superior performance in an attractive, compact design. These meters offer the latest advances in electrochemistry measurement techniques, while keeping the user interface simple and intuitive. Combining VWR sympHony meter technology with advanced sensor technology is an unbeatable combination…and an exceptional value.



Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

VWR INTERNATIONAL™

Packages Designed for Your Application

VWR™ sympHony™ meters offer superior performance in an attractive, compact design.

- Simple, intuitive user interface
- Reliable and splash-proof keypad
- Advanced measurement technology
- Multi-parameter measurement options
- Portable meters meet IP67 specifications



Package Components Pictured: SB20 (**14002-724**) and SB21 (**14002-728**) Meters, Waterproof Gel Epoxy Combination Electrode (**14002-764**), Calomel Glass Combination Electrode (**14002-772**), Semi-Micro Calomel Glass Combination pH Electrode (**14002-774**), Waterproof Gel Epoxy 3-in-1 Electrode (**14002-778**), ATC Probes (Glass and Epoxy, **14002-808, 806**), Electrode Stand (**14002-756**).



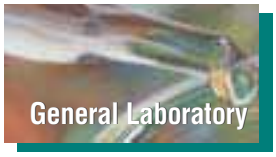
Primary Package

- **Perfect for basic teaching applications and general student use**
- **Easy automatic calibration**
- **VWR three-year limited warranty▲ on the meter**

The Primary Package contains an SB20 pH/mV/Temperature Meter (**14002-724**), Waterproof Gel Epoxy Combination pH Electrode (**14002-764**), Epoxy ATC Probe (**14002-806**), and a sympHony Heavy-Duty Electrode Stand and Holder (**14002-756**).

Cat. No.	Each
14236-074	$695.00







University Package

- **Great for Medical Schools, Biotech and Life Science applications**
- **Three-line LCD display with "ready" indication**
- **Standard or custom buffer calibration options**

The University Package contains an SB20 pH/mV/Temperature Meter (**14002-724**), Calomel Glass Combination pH Electrode (**14002-772**), Glass ATC Probe (**14002-808**), and a sympHony Heavy-Duty Electrode Stand and Holder (**14002-756**).

Cat. No.	Each
14236-076	$728.00



VWR sympHony Technical Help Line: 800-VWR-SUPP

Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

vwr.com
1.800.932.5000

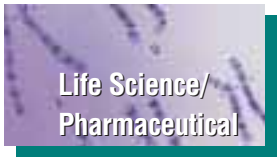


Life Science Package

- **Ideal for Biotech and Life Science applications**
- **Meter has a simple set-up menu, icon prompts, six-button keypad and data logging capability**

The Life Science Package contains an SB21 pH/mV/Temperature Meter (**14002-728**), Semi-Micro Calomel Glass Combination pH Electrode (**14002-774**), Glass ATC Probe (**14002-808**), and a sympHony Heavy-Duty Electrode Stand and Holder (**14002-756**).

Cat. No.	Each
41799-076	$1099.00





Environmental Laboratory Package

- **Great for use at Water and Wastewater plants**
- **3-in-1 electrode automatically compensates for the temperature**
- **Splashproof meter has a ready indicator and is microprocessor based**

The Environmental Laboratory Package contains an SB20 pH/mV/Temperature Meter (**14002-724**), Waterproof Gel 3-in-1 Epoxy pH Electrode (**14002-778**), and a sympHony Heavy-Duty Electrode Stand and Holder (**14002-756**).

Cat. No.	Each
41799-078	$690.00



Environmental Field Package

- **Great for use at Water and Wastewater plants**
- **Low maintenance probe has built-in Automatic Temperature Compensation**
- **Meter meets IP 67 specifications for waterproof systems**
- **Large LCD display, automatic calibration**

The Environmental Field Package contains an SP20 pH/mV/Temperature Meter (**14002-702**), Waterproof Gel 3-in-1 Epoxy pH Electrode (**14002-778**), Field Case for sympHony portable meter (**14002-720**), ten pH 4 Buffer Pouches, ten pH 7 Buffer Pouches, and ten pH 10 Buffer Pouches.

Cat. No.	Each
41799-080	$575.00







Environmental Field Package Pictured: SP20 Meter (**14002-702**), Waterproof Gel 3-in-1 Electrode (**14002-778**), Field Case (**14002-720**), pH4, pH7 and pH10 Buffer Pouches.

VWR sympHony Technical Help Line: 800-VWR-SUPP

Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

VWR INTERNATIONAL™

VWR™ sympHony™ Research (SR) Series Meters

Advanced meters that serve today's laboratory performance demands

- **Simple user-interface**
- **Reliable and splash-proof keypad**
- **Advanced measurement technology**
- **Multiple measurement options**

The VWR sympHony SR meters give the user total flexibility. The large, bright display indicates that simultaneous measurements are being made. The advanced set-up menu allows the user to select the parameters to be measured and displayed, select their units of measurement, and select various printing and datalogging functions. Log up to 200 data points for downloading to a printer or computer via the RS232 connection. Simple display prompts guide the user through each measurement and ensure error free readings.

This reasonably priced SR60IC meter is the most advanced VWR sympHony meter available and it is tailored to meet individual needs. The VWR sympHony SR meters meet the GLP Compliance requirements. Each of these meters will provide the necessary information to record time and date on all measurements, calibration printouts, as well as data logging for GLP Compliance. The SR60IC meter (**14002-752, -750**) measures pH, ISE (ion selective electrodes), mV (millivolt), conductivity, and temperature. This VWR sympHony meter can measure pH and conductivity in the same breaker without electrical interferences.

The VWR sympHony SR40C meter (**14002-744, -742**) measures pH, mV, conductivity, and temperature. The SR30I meter (**14002-748, -746**) measures pH, mV, ISE, and temperature.

Each meter kit in the SR Series comes with the sympHony Posi-pHlo™ glass electrode (**14002-782**).



Specifications

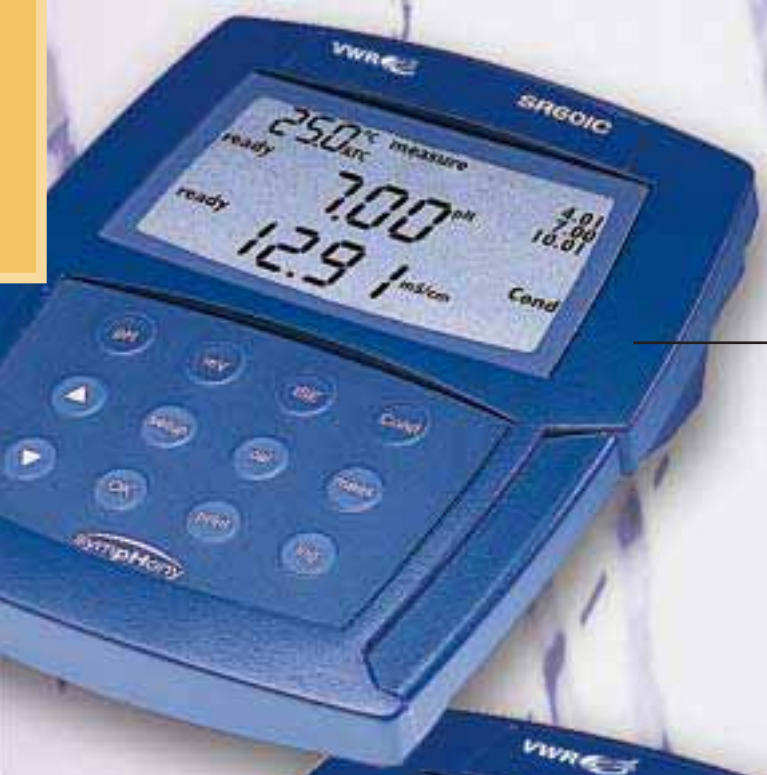
	pH/ISE/Conductivity SR60IC 14002-752, -750	pH/Conductivity SR40C 14002-744, -742	pH/ISE SR30I 14002-748, -746
pH:	-2.000 to 19.999	-2.000 to 19.999	-2.000 to 19.999
ISE:	0.000 to 1999.9	—	0.000 to 1999.9
Conductivity:	0.01 µS to 500 mS	0.01 µS to 500 mS	—
Salinity:	0.0 to 80.0 ppt	0.0 to 80.0 ppt	—
TDS:	0 to 19,900 mg/L	0 to 19,900 mg/L	—
Resistivity:	0 to 20 MΩ	0 to 20 MΩ	—
mV (RmV):	±1600.0 (±1999.9)	±1600.0 (±1999.9)	±1600.0 (±1999.9)
Temperature:	-5 to 105˚C	-5 to 105˚C	-5 to 105˚C
Calibration (pH/ISE):	1 to 5 points	1 to 5 points	1 to 5 points
Display:	LCD, 3 line	LCD, 3 line	LCD, 3 line
Datalog:	200 points	200 points	200 points
Ready Indicator:	Yes	Yes	Yes
Self-Test:	Yes	Yes	Yes
RS232:	Yes, Bidirectional	Yes, Bidirectional	Yes, Unidirectional
Line Power:	110V	110V	110V

Description	Cat. No.	Each
SR60IC Meter Only	14002-752	$1936.14
SR60IC Meter with Posi-pHlo Electrode (14002-782)	14002-750	2081.89
SR40C Meter Only	14002-744	1511.78
SR40C Meter with Posi-pHlo Electrode (14002-782)	14002-742	1649.29
SR30I Meter Only	14002-748	1538.31
SR30I Meter with Posi-pHlo Electrode (14002-782)	14002-746	1644.40

VWR sympHony Technical Help Line: 800-VWR-SUPP

Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

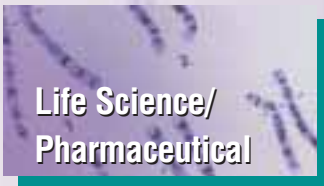
vwr.com
1.800.932.5000



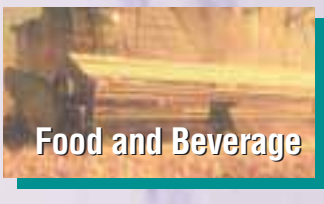
VWR Cat. No. 14002-752

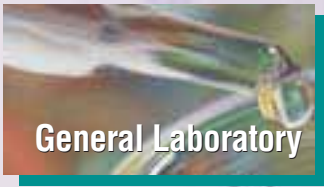


VWR Cat. No. 14002-748









Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

VWR INTERNATIONAL™

VWR™ sympHony™ Basic (SB) Series Meters

Basic, dependable meters for busy labs requiring simple, accurate measurements

- **Attractive, compact design**
- **Basic and easy-to-use**
- **Large, multi-line display**
- **Quality product for reliable measurements**
- **Tailored to today's measurement needs**

VWR sympHony SB meters are available for all common electrochemistry measurements, including pH, mV, ISE, conductivity, and dissolved oxygen.

These meters offer a user-friendly interface, simple set-up menu, large multi-line display, icon prompts, button keypad, automatic calibration, standard or custom buffer capability, selectable resolution, RS232 output connection, 100 point datalog, meter self-diagnostic test, error code indications and non-volatile memory.



Specifications

	Dissolved Oxygen SB50D 14002-740, -738	Conductivity SB40C 14002-736, 734	pH/ISE SB30I 14002-732, -730	pH SB21 14002-728, -726	pH SB20 14002-724, 722
pH:	—	—	-2.000 to 19.999	-2.000 to 19.999	-2.00 to 19.99
ISE:	—	—	0.000 to 1999.9	—	—
Conductivity:	—	0.1 µS/cm to 199.9 mS/cm	—	—	—
Salinity:	0 to 40 ppt*	0.0 to 80.0 ppt	—	—	—
TDS:	—	0 to 19,900 mg/L	—	—	—
Dissolved Oxygen:	0 to 20 mg/L, 0 to 200% Saturation	—	—	—	—
mV (RmV):	—	—	±1600.0 (±1999.9)	±1600.0 (±1999.9)	±1600.0 (±1999.9)
Temperature:	-5 to 45˚C	-5 to 105˚C	-5 to 105˚C	-5 to 105˚C	-5 to 105˚C
Calibration:	1 point and zero	1 point	1 to 3 points pH or 1 to 5 points ISE	1 to 3 points	1 to 3 points
Display:	LCD, 3 line	LCD, 3 line	LCD, 3 line	LCD, 3 line	LCD, 3 line
Datalog:	100 points	100 points	100 points	100 points	—
Ready Indicator:	Yes	Yes	Yes	Yes	Yes
Self-Test:	Yes	Yes	Yes	Yes	Yes
RS232:	Yes, Unidirectional	Yes, Unidirectional	Yes, Unidirectional	Yes, Unidirectional	—
Line Adapter:	110V	110V	110V	110V	110V

*Correction Factor Range

Description	Cat. No.	Each
SB50D Meter Only	14002-740	$963.05
SB50D Meter with Dissolved Oxygen Electrode (14002-800)	14002-738	1114.72
SB40C Meter Only	14002-736	736.97
SB40C Meter with Two-Cell Epoxy Conductivity Electrode (14002-802)	14002-734	824.82
SB30I Meter Only	14002-732	883.74
SB30I Meter with Glass Combination Electrode (14002-850)	14002-730	954.81
SB21 Meter Only	14002-728	795.68
SB21 Meter with Glass Combination Electrode (14002-850)	14002-726	856.96
SB20 Meter Only	14002-724	583.50
SB20 Meter with Refillable Electrode (14002-780)	14002-722	689.59

VWR sympHony Technical Help Line: 800-VWR-SUPP

Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

vwr.com
1.800.932.5000



VWR Cat. No. 14002-740

VWR Cat. No. 14002-732

VWR Cat. No. 14002-736

Life Science/ Pharmaceutical

Environmental

Food and Beverage

General Laboratory

VWR INTERNATIONAL™

VWR™ sympHony™ Portable Series (SP) Meters

Robust, battery-operated, microprocessor-based meters ideal for field, plant or laboratory use

- **Attractive, durable design**
- **Easy-to-use**
- **Large display**
- **Quality product for reliable measurements**
- **Exceptional value**

The design for the VWR sympHony SP Series waterproof meter ensures durability and ease of operation, and delivers reliable results every time.

These waterproof, portable meters meet the rigid IP67 specifications (International Protection) for dust-tight and waterproof systems. VWR sympHony SP meters feature a large simultaneous display, automatic calibration, Automatic Temperature Compensation (ATC), standard or manual buffer calibration, RS232, and datalogging. VWR sympHony SP meters are available for the dedicated measurement of pH and mV, pH, mV and ISE, conductivity, and dissolved oxygen.



Specifications

	Dissolved Oxygen SP50D 14002-718, 716	Conductivity SP40C 14002-714, -712	pH/ISE SP30I 14002-710, -708	pH SP21 14002-706, -704	pH SP20 14002-702, -700
pH:	—	—	-2.000 to 19.999	-2.000 to 19.999	2.00 to 19.99
ISE:	—	—	0.000 to 1999.9	—	—
Conductivity:	—	0.1 µS/cm to 200 mS/cm	—	—	—
Salinity:	0.0 to 40 ppt*	0.0 to 80.0 ppt	—	—	—
TDS:	—	0 to 19,900 mg/L	—	—	—
Dissolved Oxygen:	0 to 20 mg/L (ppm)	—	—	—	—
mV (RmV):	—	—	±1600.0 (±1999.9)	±1600.0 (±1999.9)	±1600.0 (±1999.9)
Temperature:	-5 to 45˚C	-5 to 105˚C	-5 to 105˚C	-5 to 105˚C	-5 to 105˚C
Calibration:	1 point and zero	1 point	1 to 3 points pH or 1 to 5 points ISE	1 to 3 points	1 to 3 points
Waterproof:	IP67	IP67	IP67	IP67	IP67
Display:	LCD, 3 line	LCD, 3 line	LCD, 3 line	LCD, 3 line	LCD, 3 line
Datalog:	100 points	100 points	100 points	100 points	—
Ready Indicator:	Yes	Yes	Yes	Yes	Yes
Self-Test:	Yes	Yes	Yes	Yes	Yes
RS232:	Yes	Yes	Yes	Yes	—
Line Adapter:	4AA's, 110V	4AA's, 110V	4AA's, 110V	4AA's, 110V	4AA's, 110V

*Correction Factor Range

Description	Cat. No.	Each
SP50D Meter Only	14002-718	$672.28
SP50D Meter with Dissolved Oxygen Electrode (14002-800)	14002-716	827.80
SP40C Meter Only	14002-714	663.06
SP40C Meter with Two-Cell Epoxy Conductivity Electrode (14002-802)	14002-712	749.84
SP30I Meter Only	14002-710	737.33
SP30I Meter with Gel 3-In-1 Electrode (14002-778)	14002-708	822.20
SP21 Meter Only	14002-706	658.79
SP21 Meter with Gel 3-In-1 Electrode (14002-778)	14002-704	730.01
SP20 Meter Only	14002-702	530.45
SP20 Meter with Gel Combination Electrode (14002-764)	14002-700	615.32
Field Case	14002-720	132.61

VWR sympHony Technical Help Line: 800-VWR-SUPP

vwr.com
1.800.932.5000



VWR Cat. No. 14002-718

VWR Cat. No. 14002-714

VWR Cat. No. 14002-710

Life Science/ Pharmaceutical

Environmental

Food and Beverage

General Laboratory

Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com



VWR™ INTERNATIONAL

VWR™ sympHony™ pH Electrodes

Ensure efficient, accurate measurements

Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

vwr.com
1.800.932.5000

VWR™ sympHony™ pH Electrode Selection Guide

Choosing the right electrode is the key to ensuring the most efficient and effective operation of your VWR sympHony pH meter. Glass bodied pH electrodes can be used for most sample types. The epoxy bodied pH electrodes are designed for rugged environments, multiple-user situations, and field or plant operations. For solutions containing proteins, sulfide and TRIS, use calomel pH electrodes. For viscous or dirty samples, the easy-to-clean VWR sympHony Posi-pHlo™ electrodes provide the best results. See pages 14-15 for descriptions of all electrodes listed below and page 16 for Frequently Asked Questions about electrodes.

Application	Ag/AgCl (0.02pH Precision)	Calomel (0.02pH Precision)	Gel Filled pH (0.05 to 0.10pH Precision)
General Purpose (Most Sample Types)	**14002-762, 14002-778, 14002-780, 14002-782, 14002-784, 14002-850**	**14002-772, 14002-774**	**14002-764**
Biological/Pharmaceutical	**14002-782, 14002-784, 14002-850, 14002-760**	**14002-772, 14002-774**	—
Proteins, TRIS, Enzymes, Sulfides	—	**14002-772, 14002-774, 14002-776**	—
Education/Universities	**14002-778, 14002-780, 14002-784**	—	**14002-764**
Emulsions (Foods/Cosmetics/Oils)	**14002-782, 14002-784**	—	—
Petroleum/Paints	**14002-782**	—	—
Sample pH (pH>12 or <2)	**14002-782, 14002-784, 14002-850, 14002-760**	—	—
Food/Paper/Agar	—	—	**14002-770**
Harsh Environment (Field/Plant Use)	**14002-778, 14002-780, 14002-782**	—	**14002-764**
Rugged Use	**14002-762, 14002-778, 14002-780, 14002-784**	—	**14002-764**
High Ionic Strength (Acids, Bases/Brines)	**14002-782, 14002-784**	—	—
Tall Flasks or Bottles	—	—	**14002-768**
Low Ionic Strength	**14002-782, 14002-784, 14002-850**	**14002-772**	—
Non-Aqueous (Solvents/Alcohols, etc.)	**14002-782**	—	—
Small Sample Containers (Test Tubes/Flasks)	**14002-760**	**14002-774, 14002-776**	**14002-766, 14002-768**
Viscous Samples (Particulates)	**14002-782, 14002-784**	—	—
Rain Water/Well Water	**14002-782, 14002-784, 14002-850, 14002-760**	**14002-772**	—
Potable/Drinking Water	**14002-762, 14002-778, 14002-782, 14002-784, 14002-850, 14002-780**	**14002-772**	—
Sea Water	**14002-782, 14002-784**	**14002-772**	—
Waste Water	**14002-778, 14002-782, 14002-784, 14002-778**	—	**14002-764**

Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

VWR™ sympHony™ Electrodes

High-note performance, well-orchestrated designs



VWR sympHony pH Electrodes - All feature BNC connectors

	pH Range	Temp. Range, ˚C	Body Material	Internal Reference	Junction	Lead Lgth., m	Dia., mm	Lgth., mm	Cat. No.	Each
A Glass Combination pH Electrode	0 to 14	0 to 90	Glass	Ag/AgCl	Ceramic	1	12	120	**14002-850**	$113.56
B Rugged Bulb Glass Combination pH Electrode	0 to 14	0 to 90	Glass	Ag/AgCl	Ceramic	1	12	120	**14002-762**	140.60
C Semi-Micro Gel Epoxy Combination pH Electrode	0 to 12	0 to 80	Epoxy	Ag/AgCl	Wick	1	6	150	**14002-766**	121.13
D Flat Surface Gel Epoxy Combination pH Electrode	0 to 12	0 to 80	Epoxy	Ag/AgCl	Wick	1	12	110	**14002-770**	142.76
E Semi-Micro Calomel Glass Combination pH Electrode	0 to 14	0 to 90	Glass	Calomel	Ceramic	1	6	150	**14002-774**	297.41
F Waterproof Gel 3-in-1 pH Electrode	0 to 14	0 to 80	Epoxy	Ag/AgCl	Wick	1	12	110	**14002-778**	142.76
G Posi-pHlo™ Glass pH Electrode	0 to 14	0 to 100	Glass	Ag/AgCl	Posi-pHlo™	1	12	120	**14002-782**	173.04
H Semi-Micro Glass Combination pH Electrode	0 to 14	0 to 90	Glass	Ag/AgCl	Ceramic	1	6	140	**14002-760**	121.13
I Waterproof Gel Epoxy Combination pH Electrode	0 to 14	0 to 80	Epoxy	Ag/AgCl	Wick	1	12	120	**14002-764**	54.08
J Flask Gel Epoxy Combination pH Electrode	0 to 12	0 to 80	Epoxy	Ag/AgCl	Wick	1	8	305	**14002-768**	151.41
K Calomel Glass Combination pH Electrode	0 to 14	0 to 90	Glass	Calomel	Ceramic	1	12	110	**14002-772**	140.60
L Calomel Glass Micro Combination pH Electrode	0 to 14	0 to 90	Glass	Calomel	Ceramic	1	7	210	**14002-776**	150.33
M Refillable pH Combination Epoxy Electrode	0 to 14	0 to 90	Epoxy	Ag/AgCl	Glass Fiber	1	12	110	**14002-780**	124.37
N Posi-pHlo Epoxy Combination pH Electrode	0 to 14	0 to 100	Epoxy	Ag/AgCl	Posi-pHlo	1	12	120	**14002-784**	173.04

VWR sympHony Dissolved Oxygen Electrode

	Temp. Range, ˚C	Min. Sample Flow, cm/sec.	Dia., mm	Lead Lgth., m	Dia., mm	Lgth., mm	Cat. No.	Each
O Dissolved Oxygen Electrode	-5 to 45	20	12	3	12	110	**14002-800**	$372.62

vwr.com
1.800.932.5000



VWR sympHony Conductivity Electrodes - All feature 8 PIN DIN connectors

		Range	Temp. Range, ˚C	Cell Constant	Body Material	Lead Lgth., m	Dia., mm	Lgth., mm	Cat. No.	Each
P	Two Cell Epoxy Platinum Conductivity Probe	1 µS to 20 mS	0 to 100	K = 1cm^{-1}	Epoxy	1	12	110	**14002-802**	$284.50
Q	Two Cell Carbon Conductivity Probe	10 µS to 200 mS	0 to 100	K = 1cm^{-1}	Epoxy	3	18	134	**14002-804**	421.79

VWR sympHony Ion Selective Electrodes - All feature BNC connectors

		Ion Conc. Range, ppm	Temp. Range, ˚C	Body Material	Internal Reference	Junction	Lead Lgth., m	Dia., mm	Lgth., mm	Cat. No.	Each
R	Chloride Ion Selective Combination Electrode	1.8–35,000	0 to 80	Epoxy	Ag/AgCl	Posi-pHlo™	1	12	110	**14002-786**	$551.57
S	Silver-Sulfide Ion Selective Combination Electrode	0.01–107,900 (silver) 0.003–32,000 (sulfide)	0 to 80	Epoxy	Ag/AgCl	Posi-pHlo	1	12	110	**14002-790**	540.75
T	Ammonia Gas Sensing Combination Electrode	0.01–17,000	0 to 50	Epoxy	Ag/AgCl	Membrane	1	12	110	**14002-794**	448.82
—	Ammonia Membranes, Loose (20 pk)	—	—	—	—	—	—	—	—	**14002-814**	74.26
—	Ammonia Membranes, Bonded (3 pk)	—	—	—	—	—	—	—	—	**14002-816**	85.93
U	Nitrate Ion Selective Electrode (requires reference **14002-854**)	0.1–14,000	0 to 80	Epoxy	—	—	1	12	110	**14002-796**	503.98
—	Nitrate Ion Selective Replacement Modules (3 pk)	—	—	—	—	—	1	12	—	**14002-798**	199.45
—	Electrode Body	—	—	—	—	—	—	—	—	**14002-818**	186.72
V	Fluoride Ion Selective Combination Electrode	0.02 to Saturated	0 to 80	Epoxy	Ag/AgCl	Posi-pHlo	1	12	110	**14002-788**	535.34
W	Sodium Ion Selective Glass Half-Cell Electrode (requires reference **14002-854**)	0.02 to Saturated	0 to 80	Glass	Calomel	Membrane	1	12	110	**14002-792**	403.40

VWR sympHony ATC Electrodes - All feature PIN Tip 3.5mm connectors

		Temp. Range, ˚C	Body Material	Connector Spec., mm	Lead Lgth., m	Dia., mm	Lgth., mm	Cat. No.	Each
X	Epoxy Automatic Temperature Compensation Probe	0 to 100	Epoxy	3.5	1	6	110	**14002-806**	$91.93
Y	Glass Automatic Temperature Compensation Probe	0 to 100	Glass	3.5	1	8	110	**14002-808**	97.48

VWR sympHony Redox Electrodes - All feature BNC connectors

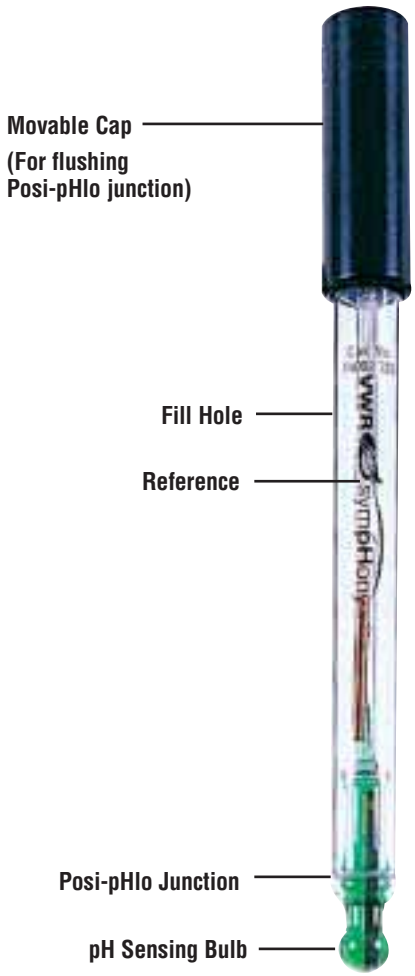
		Temp. Range, ˚C	Body Material	Internal Reference	Junction	Lead Lgth., m	Dia., mm	Lgth., mm	Cat. No.	Each
Z	Redox Epoxy Combination Electrode	0 to 80	Epoxy	Ag/AgCl	Posi-pHlo	1	12	110	**14002-856**	$154.70
AA	Redox Glass Combination Electrode	0 to 100	Glass	Ag/AgCl	Ceramic	1	12	120	**14002-858**	135.19

VWR sympHony Reference Electrodes - All feature PIN Tip connectors

		Temp. Range, ˚C	Body Material	Internal Reference	Junction	Lead Lgth., m	Dia., mm	Lgth., mm	Cat. No.	Each
AB	Single Junction Reference Half-Cell Electrode	0 to 100	Epoxy	Ag/AgCl	Posi-pHlo	1	12	110	**14002-852**	$121.13
AC	Double Junction Reference Half-Cell Electrode	0 to 100	Epoxy	Ag/AgCl	Posi-pHlo	1	12	110	**14002-854**	161.14

VWR INTERNATIONAL™

VWR™ sympHony™ Electrode Frequently Asked Questions



1. What pH electrode do I use for a specific application?

- Glass bodied pH electrodes may be used in most sample types.
- Epoxy bodied pH electrodes are designed for rugged environments, multiple-user situations and field or plant applications.
- Epoxy bodied pH electrodes should not be used in organic solvents.
- For solutions containing proteins, sulfide and TRIS, use calomel electrodes.
- For viscous or dirty samples, use sympHony Posi-pHlo™ pH electrodes for best results and easy cleaning.

2. How do I store my pH electrode?

Proper electrode storage maximizes electrode performance and extends electrode life. Use VWR sympHony dedicated pH storage solution, (**14002-828**).

3. What filling solution do I use?

The recommended filling solution depends on the type of electrode.

- Standard Ag/AgCl pH Electrodes: 4 M KCl saturated with AgCl
- Calomel pH Electrodes: 4 M KCl

4. What is a good pH electrode slope range?

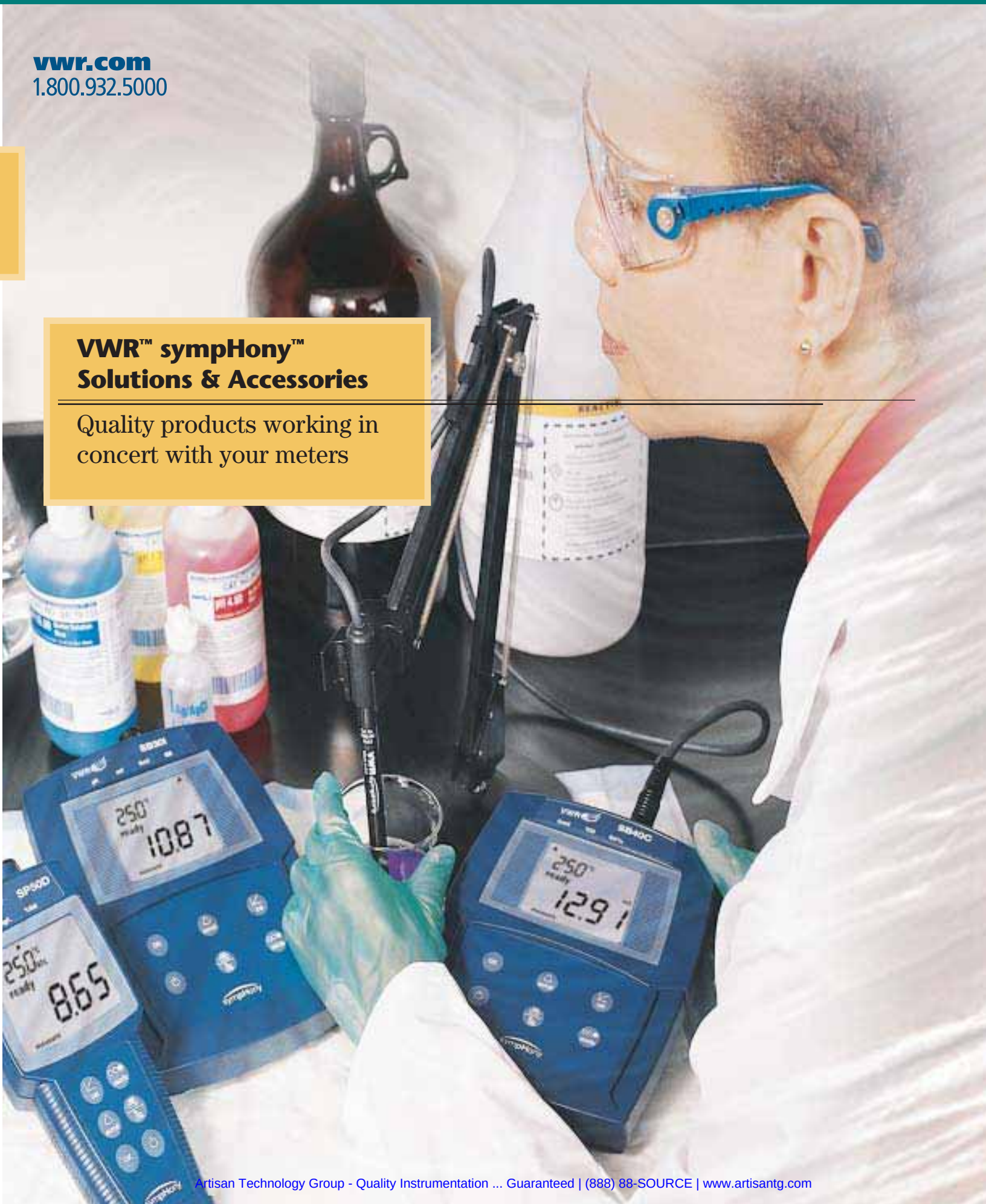
The acceptable slope range is 92% to 102%. Slopes below 92% indicate that the electrode may require cleaning or, if cleaning does not help, the electrode should be replaced. Slopes above 102% indicate that the pH buffers are contaminated.

5. Do I need an Automatic Temperature Compensation (ATC) probe?

The most common cause of error in pH measurements is temperature. The slope of a pH electrode is highly dependent on temperature, and pH buffer values and sample values change with temperature. For the most accurate results, an ATC probe is always recommended. For the most reproducible results, pH values should be recorded with the temperature values.

Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

vwr.com
1.800.932.5000



VWR™ sympHony™ Solutions & Accessories

Quality products working in concert with your meters

Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

VWR™ Solutions

Quality and Convenience



VWR™ pH Buffer Solutions

- **Ready-to-Use Convenient Sizes**
- **Wide pH Range**

VWR buffers are available as colorless solutions (pH 4 with red label, pH 7 with yellow label, pH 10 with blue label) or as color-coded solutions. They can be stored at room temperature.

Accurate to ±0.01 pH at 25°C (±0.02 for pH 2, pH 3, pH 4.63, pH 5, pH 6, pH 7.38, pH 8, pH 9, pH 10 and pH 12.45). Labels include lot number and expiration date. Standardized against solutions whose certification is traceable to the National Institute of Standards and Technology. pH 12.45 is standardized against high-purity calcium hydroxide.

Ordering Information: Available in ready-to-use polyethylene 1L bottle, 500mL bottle, 4L Cubitainer®, 20L Cubitainer, or 20mL single-use packs. Screw-on spout supplied with Cubitainer.

Buffer	Standard Reference Material No.	Volume	Cat. No.	Each	Pack of	Case of
pH 1.68, Colorless	185, 186I, 186II	500 mL	**34170-182**	**$30.57**	—	6/**$183.42**
pH 2, Colorless	185, 186I, 186II	500 mL	**34170-100**	**28.75**	6/**$172.50**	—
pH 3, Colorless	185, 186I, 186II	500 mL	**34170-103**	**28.75**	6/**172.50**	—
pH 4, Red	185, 186I, 186II	20 mL	**34170-172**	—	20/**62.89**	6 Pks./**377.34**
pH 4, Red	185, 186I, 186II	500 mL	**34170-127**	**20.44**	—	6/**122.64**
pH 4, Colorless	185, 186I, 186II	500 mL	**34170-106**	**20.44**	—	6/**122.64**
pH 4, Red	185, 186I, 186II	4 L	**34170-145**	**56.51**	—	4/**226.04**
pH 4, Colorless	185, 186I, 186II	4 L	**34170-136**	**53.87**	—	4/**215.48**
pH 4, Red	185, 186I, 186II	20 L	**34170-155**	**91.00**	—	—
pH 4, Colorless	185, 186I, 186II	20 L	**34170-164**	**91.05**	—	—
pH 4.63, Colorless	185, 186I, 186II	500 mL	**34170-184**	**31.81**	6/**190.86**	—
pH 5, Colorless	185, 186I, 186II	500 mL	**34170-109**	**28.75**	6/**172.50**	—
pH 5, Colorless	185, 186I, 186II	20 L	**34170-210**	**103.92**	—	—
pH 6, Colorless	185, 186I, 186II	500 mL	**34170-112**	**27.61**	6/**165.66**	—
pH 6.86, Colorless	185, 186I, 186II	500 mL	**34170-186**	**31.81**	6/**190.86**	—
pH 6.86, Colorless	185, 186I, 186II	20 L	**34170-202**	**111.84**	—	—
pH 7, Yellow	185, 186I, 186II	20 mL	**34170-175**	—	20/**61.12**	6 Pks./**366.72**
pH 7, Yellow	185, 186I, 186II	500 mL	**34170-130**	**20.44**	—	6/**122.64**
pH 7, Colorless	185, 186I, 186II	500 mL	**34170-115**	**19.42**	6/**116.52**	—
pH 7, Yellow	185, 186I, 186II	4 L	**34170-148**	**63.27**	—	4/**253.08**
pH 7, Colorless	185, 186I, 186II	4 L	**34170-139**	**53.96**	—	4/**215.84**
pH 7, Yellow	185, 186I, 186II	20 L	**34170-158**	**90.97**	—	—
pH 7, Colorless	185, 186I, 186II	20 L	**34170-167**	**90.96**	—	—
pH 7.38, Colorless	185, 186I, 186II	500 mL	**34170-188**	**30.76**	6/**184.56**	—
pH 8, Colorless	186I, 186II, 191, 192	500 mL	**34170-118**	**27.61**	6/**165.66**	—
pH 9, Colorless	186I, 186II, 191, 192	500 mL	**34170-121**	**17.01**	—	6/**102.06**
pH 9.18, Colorless	186I, 186II, 191, 192	500 mL	**34170-190**	**31.81**	6/**190.86**	—
pH 9.18, Colorless	186I, 186II, 191, 192	20 L	**34170-200**	**102.72**	—	—
pH 10, Blue	186I, 186II, 191, 192	20 mL	**34170-178**	—	20/**66.84**	—
pH 10, Blue	186I, 186II, 191, 192	500 mL	**34170-133**	**20.62**	—	6/**123.72**
pH 10, Colorless	186I, 186II, 191, 192	500 mL	**34170-124**	**19.42**	6/**116.52**	—
pH 10, Blue	186I, 186II, 191, 192	4 L	**34170-151**	**56.51**	—	4/**226.04**
pH 10, Colorless	186I, 186II, 191, 192	4 L	**34170-142**	**53.90**	—	4/**215.60**
pH 10, Blue	186I, 186II, 191, 192	20 L	**34170-161**	**91.03**	—	—
pH 10, Colorless	186I, 186II, 191, 192	20 L	**34170-170**	**91.04**	—	—
pH 12.45, Colorless	—	500 mL	**34170-180**	**28.02**	—	—
pH 4, 7, 10, Color-Coded (2 each)	Per 4, 7, 10 above	6 x 500 mL	**34170-192**	**—**	6/**96.45**	—

NIST 185 = Potassium Hydrogen Phthalate
NIST 191 = Sodium Bicarbonate
NIST 186I = Potassium Dihydrogen Phosphate
NIST 192 = Sodium Carbonate
NIST 186II = di-Sodium Hydrogen Phosphate

Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

vwr.com
1.800.932.5000

VWR™ sympHony™ Accessories

VWR™ Electrode Stand and Holder

- **Ideal for Multiple Readings**
- **Accepts All Standard Electrodes**
- **Pivots 360°, Extends 53cm**



Just a touch of the finger helps provide multiple measurements quickly and efficiently. Electrode arm moves in almost any direction, holding up to three electrodes safely and securely in selected positions. Fingertip control raises, lowers, and pivots the holder. The arm articulates at the three points to maintain electrodes in vertical position.

Designed to accept any standard glass, reference, combination or other electrode—even a temperature compensation probe. Weighted base and spring counter-balance permit smooth, fluid movement with superior stability.

Description	Cat. No.	Each
VWR Electrode Stand and Holder	34105-859	$99.17

VWR sympHony Heavy-Duty Electrode Stand and Holder

- **Ideal for Multiple Readings**
- **Accepts All Standard Electrodes**



A premium design with features similar to the standard VWR Electrode Stand and Holder **(34105-859)**. Electrode arm moves in almost any direction, holding up to three electrodes safely and securely in selected positions. Fingertip control raises, lowers, and pivots the holder. The arm articulates at the three points to maintain electrodes in vertical position. Designed to accept any standard glass, reference, combination or other electrode.

Description	Cat. No.	Each
VWR Heavy-Duty Electrode Stand and Holder	14002-756	$165.34

VWR sympHony Solutions



These electrode solutions are compatible with VWR sympHony electrodes (sold separately).

Description	Cat. No.	Price
59.1 mL (2 oz.) Bottles		
4 M KCl with AgCl	14002-824	Pk. of 5/$41.38
4 M KCl for Calomel	14002-827	Pk. of 5/41.38
Combination ISE Reference Fill Solution	14002-832	Pk. of 5/53.05
Single Junction Reference Fill Solution	14002-838	Pk. of 5/39.25
Double Junction Inner Reference Fill Solution	14002-840	Pk. of 5/37.13
Double Junction Outer Reference Fill Solution	14002-842	Pk. of 5/39.25
Ammonia Internal Fill Solution	14002-844	Pk. of 5/24.40
475 mL (16 oz.) Bottles		
pH Storage Solution	14002-828	Each/$41.38
Ionic Strength Adjustor (for chloride & silver sulfide)	14002-834	Each/41.38
Alkaline Reagent for Ammonia	14002-836	Each/45.62

VWR sympHony Conductivity Standards

These conductivity standards are compatible with VWR sympHony conductivity electrodes (sold separately). Each bottle contains 59.1mL (2 oz.) of conductivity standard.



Description	Cat. No.	Pack of five
1413 µS Conductivity Standard	14002-846	$47.74
12.9 mS Conductivity Standard	14002-848	47.74

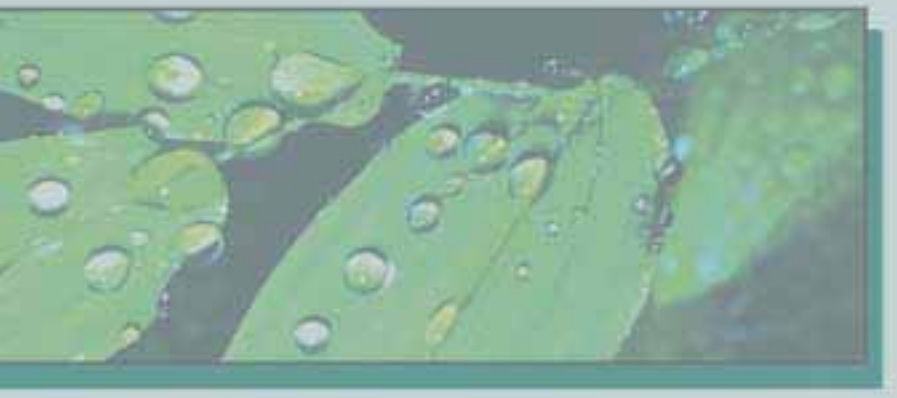
VWR sympHony Dissolved Oxygen Electrolyte Filling Solution

Electrolyte Filling solution for VWR sympHony dissolved oxygen electrodes (electrodes sold separately). 2 oz.



Description	Cat. No.	Each
Dissolved Oxygen Electrolyte Filling Solution	14002-830	$28.64









VWR, VWR International and design are trademarks of VWR International, Inc. sympHony and Posi-pHlo are trademarks of Thermo Electron Corporation. Cubitainer is a registered trademark of the Hedwin Corp.

▲VWR warranty details are available at www.vwr.com

VWR INTERNATIONAL™

vwr.com 1.800.932.5000

Order from Over 750,000 Products

Sales & Inventory Locations

Pacific Northwest
Anchorage, AK
Boise, ID
Brisbane, CA
Seattle, WA
Tualatin, OR

Southwest
Albuquerque, NM
Aurora, CO
Phoenix, AZ
San Diego, CA
San Dimas, CA

Midwest
Batavia, IL
Indianapolis, IN
Minneapolis, MN

Gulf
Lake Charles, LA
Sugarland, TX

Northeast
Franklin, MA
Rochester, NY

Mid-Atlantic
Bridgeport, NJ
Clarksburg, MD

Southeast
Morrisville, NC
Parkersburg, WV
Suwanee, GA

Canada
Mississauga, Ontario
Ville Mont-Royal, Québec

Call Direct for Specialized Service Locations

International
911 Commerce Ct.
Buffalo Grove, IL 60089
847-520-6170
fax: 847-229-0788

Puerto Rico
Carr. #869, Km. 1.5 M-4
Royal Industrial Park
Catano, PR 00962
800-932-5000
787-275-4500
fax: 787-788-4320

Global and Corporate Accounts
1310 Goshen Pkwy.
West Chester, PA 19380
610-431-1700
fax: 610-431-9174

Mexico
Super Av. Lomas Verdes
No. 464 2o Piso Col.
Los Alamos C.P. 53230
Naucalpan de Juarez,
Edo, de Mexico 2122-1600
011-52-552-122-1630
fax: 011-52-555-344-7532

Production Supplies and Services
975 Overland Ct.
San Dimas, CA 91773
877-VWR-PSCS
(877-897-7727)
fax: 888-890-9124

Furniture Group
3021 Gateway Drive
Suite 280
Irving, TX 75063
888-624-2432
fax: 972-753-1389

VWR Laboratory Distributors Services
911 Commerce Ct.
Buffalo Grove, IL 60089
800-873-8971
fax: 847-229-0668

Prices are current at time of printing and are subject to change without notice. Note: Availability for certain products may be limited by federal, state, provincial, or local licensing requirements. All prices printed are in U.S. dollars.

©2004 VWR International, Inc. All rights reserved. Printed in U.S.A.

0504 15M Lit. No. 92000Rev

Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

Artisan Technology Group is an independent supplier of quality pre-owned equipment

Gold-standard solutions

Extend the life of your critical industrial, commercial, and military systems with our superior service and support.

We buy equipment

Planning to upgrade your current equipment? Have surplus equipment taking up shelf space? We'll give it a new home.

Learn more!

Visit us at **artisantg.com** for more info on price quotes, drivers, technical specifications, manuals, and documentation.

Artisan Scientific Corporation dba Artisan Technology Group is not an affiliate, representative, or authorized distributor for any manufacturer listed herein.

We're here to make your life easier. How can we help you today?

(217) 352-9330 | sales@artisantg.com | artisantg.com

ARTISAN® TECHNOLOGY GROUP