

Hach Test Kits: Application Test Kits

See Inside!

- **Aquaculture and Aquarium Master Kits for Freshwater and Saltwater Testing.**
See pages 268-269.
- **Control Hypochlorite (Bleach) and Aqua Ammonia (Ammonium Hydroxide) Bulk Solutions Directly On-Site at the Time of Delivery!**
See page 275.
- **Monitor the Effectiveness of Corrosion Control Treatment Plans with the Upgraded Corrosion Management Kit.**
See page 284.



Be Right™

Test Kit Quick Reference Guide

Application	Product Number	See Page	Acidity	Alkalinity	Bacteria	Carbon Dioxide	Chloride	Chlorine	Copper	Cyanuric Acid	Demonstration	Dissolved Oxygen	Hardness	Iron	Manganese	Nickel	N, Ammonia	N, Nitrate	N, Nitrite	Peroxide	pH	Phosphate	Potassium	Silver	Sulfite	Other		
Acid Mine Drainage																												
MD-2	1405800	267	•	•										•							•							
Agriculture																												
Soil Saturation Extract Kit	1870000	267																									•	
Soil Fertility NPK-1	2495900	267																•			•	•	•					
Soil & Irrigation Water SIW-1	2496000	268											•					•			•	•	•				•	
Aquaculture																												
FF-1A	243002	268		•		•	•					•	•				•		•		•						•	
FF-2	243001	269	•	•		•	•					•	•				•		•		•						•	
FF-3	243003	269	•	•		•	•					•	•				•		•		•						•	
Saltwater Master	2068600	269															•	•	•		•							
Fish/Wildlife Water Ecology Kit	180233	278	•	•		•						•	•								•							
Boiler and Cooling Water – Single Parameter Kits																												
<i>(For Chromium, Copper, Dissolved Oxygen, Manganese, Molybdenum, Phosphate, Silica, and Sulfite, see Single Parameter listings—pages 286-307.)</i>																												
Benzotriazole (see Triazole)																												
DEHA/Erythorbic Acid DH-1	2168200	271																										•
Hydrazine HY-2	184900	271																										•
Oxygen Scavenger OS-1	2349500	271																										•
Phosphonate Pocket Colorimeter II Kit	5870007	272																										•
Phosphonate PN-10	2113300	272																										•
Triazole TZ-1	2167500	272																										•
Boiler and Cooling Water – Multi-parameter Kits																												
Boiler Feed and Scale BSC-1	2350300	270		•			•					•																
Boiler Treatment Control BTC-2	2350400	270																			•	•						•
Complete Kit BC-3	2350500	270		•			•	•				•	•								•	•						•
General Boiler/Cooler AL-94 MG-L	222403	272		•			•					•	•								•							
Professional Boiler/BT-DT	2350600	273		•			•					•									•	•						•
Professional Boiler/Cooler PBC-DT	2350700	273		•			•	•				•	•						•		•	•						•
Drinking Water																												
Nitrification Control Kit	2882200	136						•												•								•
Hardness and Iron HA-95A	145602	273										•	•															
Hardness and Iron HA-77	202300	274										•	•															
Iron and Manganese IR-20	146300	274												•	•													
Iron and pH IR-23	256200	274												•							•							
Hardness, Iron, and pH HA-62	183700	274										•	•								•							
Hardness, Iron, and pH HA-62A	183701	274										•	•								•							
Hardness, Iron, and pH HA-62B	183702	274										•	•								•							
Chlorine, Hardness, Iron, and pH CN-39WR	223002	274						•				•	•								•							
Chlorine, Coliform and pH Kit	2223111	275						•													•							•
Hypochlorite Test Kit CN-HRDT	2687100	275						•																				
Hypochlorite Test Kit CN-HR	2687200	275						•																				
Aqua Ammonia DT Test Kit	2930400	275																										•
Corrosion Management CM-1	2495700	284		•								•									•	•						•
Surface Water	2559800	284						•				•									•							

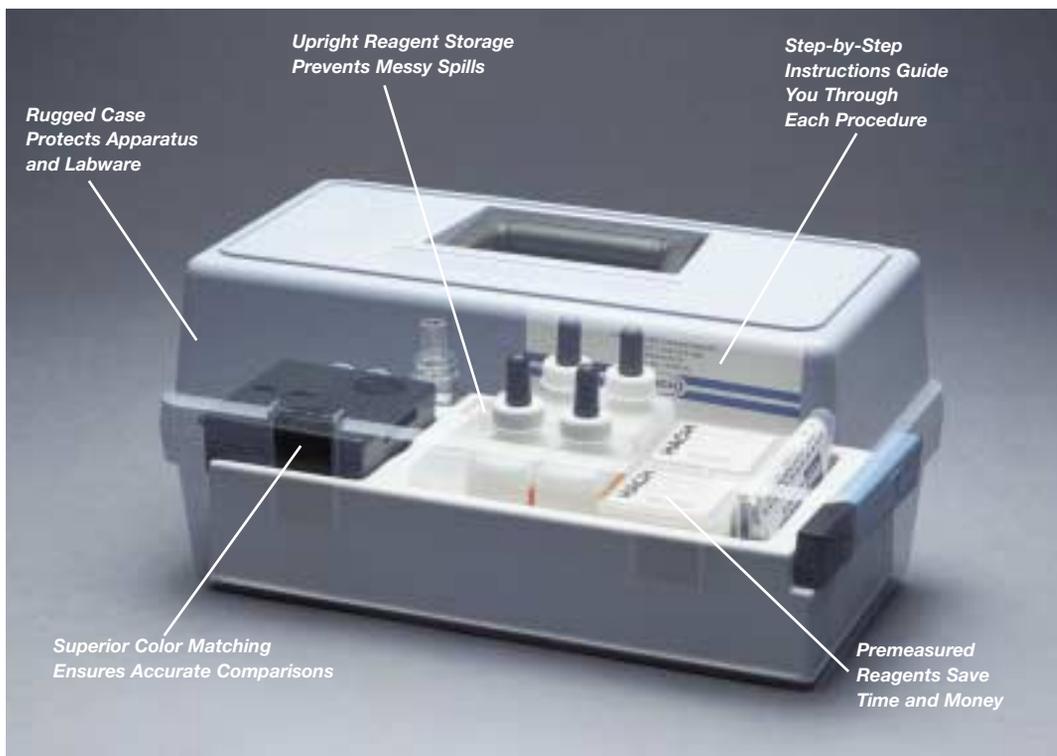
Test Kit Quick Reference Guide

Application Test Kits

Application	Product Number	See Page	Acidity	Alkalinity	Bacteria	Carbon Dioxide	Chloride	Chlorine	Copper	Cyanuric Acid	Demonstration	Dissolved Oxygen	Hardness	Iron	Manganese	Nickel	N, Ammonia	N, Nitrate	N, Nitrite	Peroxide	pH	Phosphate	Potassium	Silver	Sulfite	Other	
Education																											
Water Pollution Set	2672533	277						•				•					•			•	•						
Water Ecology Set	2672433	277	•	•		•						•					•			•	•						
Stream Survey	2712000	276										•					•	•			•	•				•	
Water, Water Everywhere CEL/820	2687600	262						•				•		•							•					•	
Drinking Water, Level 1	2788000	276					•		•					•							•						
Drinking Water, Level 2	2764300	276					•		•					•							•						
Ponds & Streams, Level 1	2787600	276		•															•		•	•					
Ponds & Streams, Level 2	2787700	276		•															•		•	•					
Fish/Wildlife Water Ecology Kit	180233	278	•	•		•						•	•								•						
Wastewater, Level 1	2787800	276						•														•					
Wastewater, Level 2	2787900	276						•														•					
Pools, Spas, and Hot Tubs																											
Pool and Spa	2234901	279			•			•													•					•	
Pool Master	2315001	280		•				•		•			•								•						
Free & Total Chlorine and pH CN-67	1411100	279						•													•						
Total Chlorine and pH CN-48B	186302	280						•													•						
Chlorine/pH Pocket Colorimeter II Kit	5870012	279						•													•						
Cyanuric Acid CY-3	185102	279								•																	
Bromine L-P Cube	2194000	280																								•	
Wastewater																											
STPL-WRT	188703	281						•				•									•					•	
Storm Water SW-1	2481300	281						•	•												•					•	
Surface Water	2559800	284						•				•					•	•			•					•	
Water Conditioning																											
Deluxe Demonstration AD-16E	148410	282									•	•	•					•			•					•	
Soap Demonstration SO-1	225300	281									•																
Demo 15-E	148201	282									•	•	•								•						
Water Ecology and Limnology																											
CA-10WR	143801	282				•						•									•						
AL-36B	180202	283	•	•		•						•	•								•						
AL-36DT	2063800	283	•	•		•						•	•								•						
Water Quality																											
Corrosion Management CM-1	2495700	284		•								•									•	•				•	
Surface Water	2559800	284						•				•					•	•			•					•	

When is a Kit a Hach Test Kit?

Though several different components are used in the making of a Hach test kit, every easy-to-use kit has the features listed below.



Premeasured Reagents Save Time and Money

Unit-dose reagents, preferred by most analysts, require no mixing or measuring, saving you time and money every time you test. Pre-measured reagents are developed specifically for our test systems and contain the exact amount of reagent required for one test. Stable, pre-mixed reagent formulations minimize the number of test steps.

Everything You Need for Testing Anywhere

From flasks to beakers to viewing tubes, everything you need is supplied with Hach kits. Many components are molded from durable plastics and are ideal for poolside and educational applications, where safety is a major concern.

Precision with Durability

With Hach's color matching technology and stringently tested dyes and plastics, you get more accurate color comparisons than with glass comparators—in any light. Hach subjects all dyes and plastics used in color discs and cubes to extreme weathering and ultraviolet (UV) tests to assure the most accurate results. UV light absorbers in the plastic matrix minimize UV degradation. And durable plastics do not break like glass. All these features add up to years of high-quality testing.

Easy To Follow Instructions

You don't have to be a trained chemist to get professional results with Hach's proven methods. Kits are supplied with illustrated instructions that guide you step by step through each procedure.

Spill-Resistant Storage

During transportation and use, custom case inserts store reagents in an upright position and prevent kit components from shifting, breaking or spilling. Case inserts are molded from high quality materials and are easy to clean.

Survives Outdoor Field-Testing Conditions

Rugged, chemical-resistant test kit cases, molded from durable polypropylene, can withstand the harshest conditions. Some kits feature a compartmentalized reagent cabinet to keep chemistries organized.

Trusted Technology and Support

When Hach scientists develop an analysis, their goal is to ensure accurate results. Hach color discs, color cubes, and instruments ensure accurate results every time.

In areas where strip mining has occurred, runoff is often either acidic or alkaline and may contain large amounts of soluble metal salts. It could cause pH changes or otherwise contaminate lakes or streams, kill fish, and bans on public use may result.

Acid Mine Drainage Kit

Model MD-2

- Determine Iron and pH using a color comparator with color disc
- Acidity and alkalinity tests use easy drop-count titrations



Prod. No.	Parameter	Range*	No. of Tests
1405800	Acidity (MO and P or total)	1 drop = 0.4 or 1 gpg as CaCO ₃	100 of each
	Alkalinity (P and M)	1 drop = 0.4 or 1 gpg as CaCO ₃	100 of each
	Iron	0-10 mg/L	100
	pH	4-10 pH units	300

Agriculture

Good crop production is directly tied to maintaining the optimum balance of nitrogen, phosphorus and potassium soil levels for the specific crop being grown. Proper nutrient levels together with correct soil pH levels also support nutrient availability, organic matter decomposition and overall general soil balance.

Soil Fertility Kit

Model NPK-1

- Using color disc and dip stick methods, provides an economical, simple, effective way to determine nitrogen, phosphorus, and potassium content of soil
- Kit also includes a Pocket Pal™ pH Tester for quick pH measurements



Prod. No.	Parameter	Range*	No. of Tests
2495900	Phosphorus	1-130 mg/L	100
	Potassium	0-250 mg/L	100
	Nitrate-Nitrogen	1-60 mg/L	100
	pH Pocket Pal™ Tester	0-14 pH units	200 hours battery life

Soil Saturation Extract Kit

- Provides apparatus to prepare soil saturation extract for conductivity or pH measurements
- Also use to extract greenhouse growing media for pH, salts, water soluble N, P, K, Ca, and Mg determinations
- Includes complete instructions for soil sampling, extract preparation, conductivity and pH measurements, and interpretation of results

Prod. No.	Test Description
1870000	Soil Extraction—sample preparation required



Continued on next page.

*1 ppm = 1 mg/L; 1 ppb = 1 µg/L; gpg = grains per gallon; 1 gpg = 17.1 mg/L or 17.1 ppm



Soil and Irrigation Water Kit

Model SIW-1

- Ideal for fertility analysis, site characterization, and irrigation water quality assessment under a wide variety of conditions
- Farmers, researchers, extension agents, and educators can use the versatile kit at remote sites, in the classroom, or even in areas lacking electricity
- Uses color disc, drop count titration, and dipstick method
- Includes manual for Interpretation of Soil and Irrigation Water test results

<u>Prod. No.</u>	<u>Test Description</u>	<u>Range*</u>
2496000	Soil Tests	
	% Base Saturation	0-100%
	Cation Exchange Capacity	0-M [†] meq/100 g
	Exchangeable Sodium	—
	Free-Lime Estimation	—
	Gypsum Requirement	0-360 kg/ha (0-15 tons/ac)
	Exchangeable Calcium & Magnesium	0-M [†] meq/100 g
	Lime Requirement	0-360 kg/ha (0-15 tons/ac)
	Nitrate-Nitrogen	0-60 mg/L
	pH Pocket Pal™ Tester	0-14 pH
	Phosphorus	1-130 mg/L
	Potassium	0-250 mg/L
	Sodium, exchangeable	—
	Soil Texture Estimation	—
	Total Exchangeable Acidity	0-M [†] meq/100 g
	Irrigation Water Tests	
	Calcium and Magnesium	—
	Conductivity Pocket Pal™ Tester	10-1990 TDS
	Nitrate-Nitrogen	1-50 mg/L
	pH Pocket Pal™ Tester	0-14 pH units
	Potassium	0-5
	Sodium Estimation	—
	Sodium Absorption Ratio	—

Aquaculture

Maintaining good water quality is essential for profitable fish production. In many cases, the availability and cost of “crop” insurance is directly related to testing programs.

Nine-Parameter Aquaculture Kit

Model FF-1A

- An economical choice, this model includes nine basic water quality tests
- Reagents and equipment are supplied for drop-count titration and colorimetric measurement using continuous-gradient color discs



<u>Prod. No.</u>	<u>Parameter</u>	<u>Range*</u>	<u>No. of Tests</u>
243002	Alkalinity (P & M)	0.4-8 gpg	100
	Ammonia	0.1-3 mg/L	300
	Carbon Dioxide	5-100 mg/L	100
	Chloride	5-400 mg/L	100
	Dissolved Oxygen	0.2-20 mg/L	100
	Hardness as CaCO₃	1-30 gpg [†]	100
	Nitrite	0.1-0.5 mg/L	100
	pH	4-10 pH units	300
	Temperature	-10 to 110°C (1 to 220°F)	No limit

Continued on next page.

*1 ppm = 1 mg/L; 1 ppb = 1 µg/L; gpg = grains per gallon; 1 gpg = 17.1 mg/L or 17.1 ppm

[†]No upper limit.

Ten-Parameter Aquaculture Kit

Model FF-2 with Digital Titrator

- Allows measurement of 10 critical fresh water parameters using accurate Digital Titrator titration and continuous color-disc colorimetry
- Meters for dissolved oxygen are available as options (See pages 24-43.)

Prod. No.	Parameter	Range*	No. of Tests
243001	Acidity (MO & total) as CaCO ₃	100-4,000 mg/L	Up to 100 of each
	Alkalinity (P & M) as CaCO ₃	100-4,000 mg/L	Up to 100 of each
	Ammonia	0.1-3 mg/L	300
	Carbon Dioxide	10-100 mg/L	Up to 100
	Chloride	10-100 mg/L	100
	Dissolved Oxygen	0-10 mg/L	100
	Hardness as CaCO ₃	100-4,000 mg/L	100
	Nitrite	0.01-0.5 mg/L	100
	pH	4-10 pH units	300
	Temperature	-10 to 110°C (1 to 220°F)	No limit



Saltwater Aquaculture Kit

Model FF-3 with Digital Titrator

- Designed to meet the demands of specialized salt-water applications
- Each kit includes the apparatus and reagents necessary to measure 10 critical parameters using digital titrator, titration, and color disc methods
- Two tests, ammonia-nitrogen and a convenient chloride titration test for salinity, have been designed exclusively for this kit

Prod. No.	Parameter	Range*	No. of Tests
243003	Acidity (MO & total) as CaCO ₃	100-4,000 mg/L	Up to 100 of each
	Alkalinity (P & M) as CaCO ₃	100-4,000 mg/L	Up to 100 of each
	Ammonia	0.1-3 mg/L	100
	Carbon Dioxide	10-100 mg/L	Up to 100
	Chloride as salinity	2-100 ppt	Up to 100
	Dissolved Oxygen	0-10 mg/L	100
	Hardness as CaCO ₃	100-4000 mg/L	100
	Nitrite	0.01-0.5 mg/L	100
	pH	4-10 pH units	300
	Temperature	-10 to 110°C (1 to 220°F)	No limit



Saltwater Master Kit

- Designed for aquarium and commercial point-of-purchase water quality testing (lobster and crab tanks)
- Includes all instruments and apparatus necessary to measure four critical parameters, including ammonia, nitrate, nitrite, and pH
- Color measurement using step-wise gradient color cubes

Prod. No.	Parameter	Range*	No. of Tests
2068600	Ammonia	0.5-3.0 mg/L	50
	Nitrate	1-50 mg/L	50
	Nitrite	0.1-0.75 mg/L	50
	pH	6.5-8.5 pH	50



*1 ppm = 1 mg/L; 1 ppb = 1 µg/L; gpg = grains per gallon; 1 gpg = 17.1 mg/L or 17.1 ppm

†No upper limit.

Boiler / Cooling Water

Proper maintenance and economical operation of modern boilers and cooling towers require a careful balance between water quality parameters and treatment chemicals. Hach Boiler/Cooling Water kits include models for monitoring a single additive and several that offer a wide range of testing capability.



Boiler Feed and Scale Kit

Model BSC-1

- Uses drop count titration and color disc methods to provide an economical means for preventing scale formation in small industrial boilers
- Uses drop count titration methods to determine levels of alkalinity, chloride, and hardness

Prod. No.	Parameter	Range*	No. of Tests
2350300	Alkalinity as CaCO ₃	5-400 mg/L	100
	Chloride as Cl ⁻	5-400 mg/L	100
	Hardness as CaCO ₃	1-20 mg/L	100



Boiler Treatment Control Kit

Model BTC-2

- Provides an economical means of monitoring common boiler water treatment chemicals
- Sulfite is generally added to boiler water to reduce dissolved oxygen levels, while phosphate additions help reduce scale formation

Prod. No.	Parameter	Range*	No. of Tests
2350400	Sulfite as SO ₃ ²⁻	1-20/ 10-200 mg/L	100
	Phosphate as PO ₄ ³⁻	0.1-5/ 1-50 mg/L	100†
	pH	7.8-10.0 pH units	100



Complete Boiler and Cooling Water Kit

Model BC-3

- Includes all of the tests in BSC-1 and BTC-2, as well as tests for chlorine, silica, and iron
- Monitor chlorine levels in cooling towers to prevent microbiological fouling
- Silica contamination can be a problem in boiler feedwater, while iron levels are monitored to provide an indication of corrosion
- Provides a wider range of pH testing capability than the BTC-2 kit
- Uses drop count titration and color disc methods

Prod. No.	Parameter	Range*	No. of Tests
2350500	Includes everything in BSC-1 and BTC-2 plus:		50 of each†
	pH	5.5-8.5 pH units	
	Iron as Fe	0.01-0.1 or 0.05-1.2 mg/L	
	Silica as SiO ₂	1-40 or 20-800	
	Chlorine Total as Cl ₂	0.1-3.5 mg/L	

*1 ppm = 1 mg/L; 1 ppb = 1 µg/L; gpg = grains per gallon; 1 gpg = 17.1 mg/L or 17.1 ppm

†Kit includes nine Heatab fuel tablets (required for digestion.) For each metaphosphate determination, one Heatab is required. For each organic total phosphate determination, three Heatabs are required. See page 311 for additional Heatabs.

DEHA (Oxygen Scavenger) Test Kit

Model DH-1

- Simple, fast, color disc method
- Measures N, N-Diethylhydroxylamine (DEHA) directly in three different concentration ranges.
- To measure other oxygen scavenger compounds, use Prod. No. 2349500, Oxygen Scavenger Test Kit.



Prod. No.	Parameter	Range*	No. of Tests
2168200	DEHA	1-65 µg/L 5-375 µg/L 22.5-1700 µg/L	50

Hydrazine Kit

Model HY-2

- Measures Hydrazine, a common oxygen scavenger in boiler water, using the simple color disc method

Prod. No.	Parameter	Range*	No. of Tests
184900	Hydrazine as N ₂ H ₄	0.02-1 mg/L	300

Reagents are supplied for ≥ 300 tests; enough DI water for 50 tests. Obtain DI water locally or use the refillable demineralizer bottle listed below.

ACCESSORY:

1429900	DI Water Bottle	177-mL (6 oz) capacity demineralizer bottle, refillable	
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Oxygen Scavenger Kit

Model OS-1

- Simple, fast, color disc method
- Measures common oxygen scavengers: DEHA, hydroquinone, ISA, and MEKO



Prod. No.	Parameter	Range*	No. of Tests
2349500	Oxygen Scavenger As DEHA, hydroquinone, erythorbic acid, and methylethylketoxime	Ranges & increments are similar to DEHA Test Kit, but are dependent on oxygen scavenger used.	50

Continued on next page.

*1 ppm = 1 mg/L; 1 ppb = 1 µg/L; gpg = grains per gallon; 1 gpg = 17.1 mg/L or 17.1 ppm



Phosponate Test Kit

Model PN-10

- Simple, fast, color disc method
- UV lamp digestion converts phosphonates into reactive phosphate
- Control phosphonate concentration to save chemical costs
- Hach's reliable PhosVer 3 reagent provides results in under 15 minutes

Prod. No.	Parameter	Range*	No. of Tests
	Phosphonate	1-5 to 1-250 mg/L	100

VERSIONS:

2113300	Phosphonate Kit, 115 Vac, 60 Hz
2113302	Phosphonate Kit, 230 Vac, 50 Hz
2113301	Phosphonate Kit without UV lamp and power supply.



Phosponate Pocket Colorimeter™ II Kit

- Pocket Colorimeter™ II provides hand-held, rugged, waterproof analysis (IP 67 rated at 1m for 30 minutes; excludes battery compartment)
- Datalogs last 10 points with measurement time
- Includes sample cells, reagents, battery, UV Lamp, and procedure manual

Prod. No.	Parameter	Range*	No. of Tests
	Phosphonate as PO ₄ ³⁻	0.1-25.0 mg/L 1-125 mg/L	100

VERSIONS:

5870007	Phosphonate Kit, with 115 V UV Lamp
5870008	Phosphonate Kit, with 230 V UV Lamp



Triazole Test Kit

Model TZ-1

- Measures common corrosion and biological growth inhibitor using simple color disc method
- UV lamp digestion

Prod. No.	Parameter	Range*	No. of Tests
	Triazole as benzotriazole or tolyltriazole,	0.5-15 mg/L	50

VERSIONS:

2167500	Triazole Kit, 115 Vac, 60 Hz
2167502	Triazole Kit, 230 Vac, 50 Hz
2167570	Triazole Kit, without UV lamp and power supply



General Boiler Water Kit

Model AL-94 MG-L

- Used for controlling boiler and cooling water treatment and checking corrosion
- Economical solution for the small boiler operator who needs to monitor alkalinity, chloride, hardness, iron, and pH
- Uses drop count titration and color disc methods

Prod. No.	Parameter	Range*	No. of Tests
222403	Alkalinity as CaCO ₃	5-400 mg/L	100
	Chloride as Cl ⁻	5-400 mg/L	100
	Hardness as CaCO ₃	1-20 mg/L	100
	Iron as Fe	0.1-5 mg/L	100
	pH Wide Range	4-10 pH units	300

*1 ppm = 1 mg/L; 1 ppb = 1 µg/L; gpg = grains per gallon; 1 gpg = 17.1 mg/L or 17.1 ppm

Professional Boiler Treatment Kit

Model BT-DT

- This sophisticated kit offers testing of treatment chemicals and feedwater parameters, with the accuracy demanded by water treatment professionals
- Kit parameters include alkalinity, chloride, hardness, sulfite, phosphate, and pH, with a wide choice of ranges provided
- The included Digital Titrator simplifies titration procedures, saves time, and provides greater accuracy than drop count testing
- Kit also includes color disc for simple, fast analysis

Prod. No.	Parameter	Range*	No. of Tests
2350600	Alkalinity as CaCO ₃	10-4000 mg/L in six different ranges	100
	Chloride as Cl ⁻	10-8000 mg/L in seven different ranges	100
	Hardness as CaCO ₃	10-4000 mg/L in six different ranges	100
	Sulfite as SO ₃ ⁻	40-800 mg/L in three different ranges	100
	Phosphate as PO ₄ ³⁻ pH	0.1-5, 1-50 mg/L 7.8-10 pH units	100† 100



Professional Boiler and Cooling Water Kit

Model PBC-DT

- In addition to all of the tests offered in Model BT-DT, this kit provides testing capability for iron, silica, chlorine, nitrite, and total dissolved solids (TDS)
- The versatility and accuracy of this kit is invaluable to boiler operators and chemical sales professionals
- Uses digital titrator titration and color disc methods

Prod. No.	Parameter	Range*	No. of Tests
2350700	Includes everything in BT-DT plus:		50 of each†
	pH	5.5-8.5 pH units	
	Iron as Fe	0.01-0.20, 0.05-1.2 mg/L	
	Silica as SiO ₂	1-40, 20-800 mg/L	
	Chlorine as Cl ₂	0.1-3.5 mg/L	
	Nitrite as NO ₂ ⁻	2-100, 40-2000 mg/L	
	TDS Pocket Pal™ Tester as NaCl	10-1990 mg/L	



Drinking Water

The efficient production of drinking water covers many facets of water quality. Raw water sources, treatment options and distribution systems are all elements for consideration. Many test kit options are available for handling the testing requirements for producing and delivering quality potable water to the customer's tap.

Hardness and Iron Kit

Model HA-95A with Color Cube

- Compact and convenient for routine checks
- Uses drop count titration and color cube methods

Prod. No.	Parameter	Range*	No. of Tests
145602	Hardness (as CaCO ₃)	1-20 gpg	50
	Iron	0.1-5 mg/L	50

*1 ppm = 1 mg/L; 1 ppb = 1 µg/L; gpg = grains per gallon; 1 gpg = 17.1 mg/L or 17.1 ppm

†Kit includes nine Heatab fuel tablets (required for digestion.) For each metaphosphate determination, one Heatab is required. For each organic total phosphate determination, three Heatabs are required. See page 311 for additional Heatabs.



Continued on next page.



Hardness and Iron Kit

Model HA-77 with Color Disc

- The kit to use for more resolution in a visual test
- Uses drop count titration and color disc methods

Prod. No.	Parameter	Range*	No. of Tests
202300	Hardness (as CaCO ₃)	1-20 gpg	100
	Iron	0.1-5 mg/L	100



Iron and Manganese Kit

Model IR-20

- Use this color disc kit when water customers complain of stained and dingy laundry
- Provides quick, on-the-spot tests for iron and manganese to see where problems lie

Prod. No.	Parameter	Range*	No. of Tests
146300	Iron	0.1-5 mg/L	100
	Manganese	0.1-3 mg/L	100



Iron and pH Kit

Model IR-23

- Uses a color disc to provide accurate, on-site measurement of two important parameters to help maintain water quality within the desired range

Prod. No.	Parameter	Range*	No. of Tests
256200	Iron	0.2-10 mg/L	100
	pH	4-10 pH units	300



Hardness, Iron, and pH Kit

Models HA-62, HA-62A, and HA-62B

- Combines frequently measured parameters in one rugged kit
- Uses color disc and drop count titration methods



Prod. No.	Parameter	Range*	No. of Tests
MODEL HA-62			
183700	Hardness (as CaCO ₃)	1-20 gpg	100
	Iron	0.1-5 mg/L	100
	pH	6.5-8.5 pH units	300
MODEL HA-62A			
183701	Hardness (as CaCO ₃)	1-20 gpg	100
	Iron	0.2-10 mg/L	100
	pH	6.5-8.5 pH units	300
MODEL HA-62B			
183702	Hardness (as CaCO ₃)	1-20 gpg	100
	Iron	0.2-10 mg/L	100
	pH	4-10 pH units	300



Chlorine, Hardness, Iron, and pH Kit

Model CN39-WR

- Includes frequently measured water quality parameters in one rugged test kit
- Uses color disc and drop count titration methods

Prod. No.	Parameter	Range*	No. of Tests
223002	Chlorine, Total	0.1-3.5 mg/L	100
	Hardness (as CaCO ₃)	1-20 gpg [†]	100
	Iron	0.1-5 mg/L	100
	pH	4-10 pH units	300

*1 ppm = 1 mg/L; 1 ppb = 1 µg/L; gpg = grains per gallon; 1 gpg = 17.1 mg/L or 17.1 ppm

Chlorine, Coliform, and pH

Model CEC-2 with 120 Vac UV Lamp and Incubator

- Uses color disc method to provide a reliable, quick way to determine the presumptive presence of coliforms and the specific presence of Escherichia coli, a fecal coliform



Prod. No.	Parameter	Range*	No. of Tests
	Chlorine, Free and Total	0.02-0.70 mg/L + 0.1-3.5 mg/L	100 F + 100 T
	Coliform	<2.2 to >16 bacteria/100 mL	10
	pH Pocket Pal™ Tester	0-14 pH units	200 hours battery life

VERSIONS:

2223111	Chlorine, Coliform, and pH Kit, with 120 Vac lamp
2223112	Chlorine, Coliform, and pH Kit, with 240 Vac lamp

Hypochlorite Test Kits

Model CN-HRDT and CN-HR

- Measure activity of hypochlorite (bleach) solutions
- Digital Titrator or Drop Count kits provide a choice of methods
- Designed for on-site analysis of bulk hypochlorite deliveries or bulk storage solutions at drinking water or chloramination facilities
- Verify concentration of hypochlorite solutions at time of delivery



Prod. No.	Parameter	Range*	No. of Tests
	Hypochlorite	5-15% = 50-150 g/L Cl ₂	100

VERSIONS:

2687100	Hypochlorite Kit, Model CN-HRDT with Digital Titrator
2687200	Hypochlorite Kit, Model CN-HR - Drop Count

ALSO AVAILABLE:

2687000	Reagent Set for Hypochlorite Digital Titrator Kit	1000
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Aqua Ammonia DT Test Kit

Model NI-HRDT

- Quickly determine aqua ammonia (ammonium hydroxide) solution concentrations
- Ideal for on-site analysis of bulk aqua ammonia deliveries at drinking water or chloramination facilities
- Verify concentration of aqua ammonia solutions at time of delivery
- Accurate titration method using the Hach Digital Titrator



Prod. No.	Parameter	Range*	No. of Tests
2930400	Aqua Ammonia	5-35% (50-350 g/L) as NH ₃	100

ALSO AVAILABLE:

2930500	Reagent Set for HR Aqua Ammonia Kit Includes: 8.0 N Sulfuric Acid Titration Cartridge and Wide Range pH Indicator Solution
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*1 ppm = 1 mg/L; 1 ppb = 1 µg/L; gpg = grains per gallon; 1 gpg = 17.1 mg/L or 17.1 ppm

Education is essential for understanding and protecting our environment, and water chemistry is a vital part of this understanding. Teaching students and citizens the science of testing water provides a solid foundation for making future decisions on environmental and water use issues.



Healthy Water, Healthy People

Hach is a proud sponsor of the "Healthy Water, Healthy People" Program. For more information on educational test kits, please contact HWHP at 866-337-5486 or visit www.healthywater.org.



Stream Survey Kit

- Customized for the popular river and stream surveys that are occurring in many watersheds by citizen and student groups
- Features many of the most commonly tested parameters that are known to correlate directly to the health of a river, stream, or creek
- Uses color disc and drop count titration methods

Prod. No.	Parameter	Range*	No. of Tests
2712000	Ammonia	0.1-2.5 mg/L*	100
	Nitrate	0.02-1, 0.2-10 mg/L	100
	Dissolved Oxygen	0.2-4.0, 1-20 mg/L	100
	pH Pocket Pal™ Tester	0-14 pH units	200 hours battery life
	Phosphate, Total	0-1, 0-5, 0-50 mg/L	100
	Temperature	-10 to 110°C/0 to 220°F	—



Just Add Water™ Classroom Science Kits

- Each test strip kit is a complete water science lesson, making water testing incredibly simple and fun!
- Every kit comes with a variety of Hach's most popular Water Quality Test Strips, detailed instructions, and a complete teacher-tested curriculum on diskette—as well as TestYES Positive Result Chemistry, to demonstrate the appearance of a positive test result
- Each kit listed below is available as a Level 1 kit for grades 3-6 and Level 2 for Middle/Junior High School

Prod. No.	Kit Name	Parameters	No. of Tests
2788000	Drinking Water Kit, Level 1	pH, Hardness, Copper, Chlorine	50 each
2764300	Drinking Water Kit, Level 2	pH, Hardness, Copper, Chlorine	50 each
2787600	Ponds & Streams Kit, Level 1	Alkalinity, pH, Phosphate, Nitrate	50 each
2787700	Ponds & Streams Kit, Level 2	Alkalinity, pH, Phosphate, Nitrate	50 each
2787800	Wastewater Kit, Level 1	Chlorine, Phosphate, Nitrate	50 each
2787900	Wastewater Kit, Level 2	Chlorine, Phosphate, Nitrate	50 each



CEL/820 Water Quality Laboratory: Water, Water Everywhere!

See page 262.

*1 ppm = 1 mg/L; 1 ppb = 1 µg/L; gpg = grains per gallon; 1 gpg = 17.1 mg/L or 17.1 ppm

Water Pollution Set

- A great way for students to study the impact of wastewater on receiving streams
- Uses drop count titration and color disc methods
- Contains six test modules, allowing you to perform tests for Dissolved Oxygen, Free & Total Chlorine, Phosphate, Nitrate, Ammonia and pH
- Each module contains reagents, apparatus and step-by-step instructions for approximately 100 tests each and is encased in a compact polypropylene case



Prod. No.	Parameter	Range*	No. of Tests
2672533	Dissolved Oxygen	0.2 - 4 and 1-20 mg/L	100
	Chlorine, Free/Total	0 - 3.5 mg/L	50 Free/50 Total
	Phosphate	0.02-1, 0.1-5, 1-50 mg/L	100
	Nitrate	0.02-1, 0.2-10 mg/L	50
	Ammonia	0.1-2.5 mg/L	100
	pH Pocket Pal™ Tester	0-14 pH units	200 hours battery life

Water Ecology Set

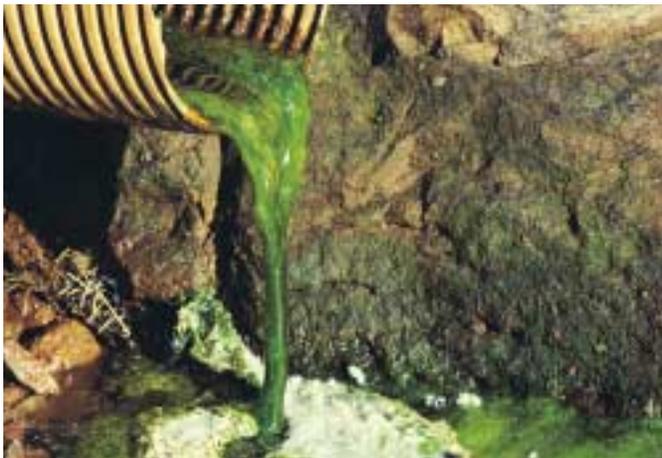
- Helps teach how to analyze the quality of local waterways, a focus of today's science curriculum
- Uses drop count titration and color disc methods
- Contains six test modules, allowing you to perform tests for acidity, alkalinity, carbon dioxide, dissolved oxygen, ammonia, and pH
- Each module contains reagents, apparatus and step-by-step instructions for approximately 100 tests each and is encased in a compact polypropylene case
- Rugged, chemically resistant case holds the individual modules to allow easy transportation to the testing site



Prod. No.	Parameter	Range*	No. of Tests
2672433	Acidity	5-100, 20-400 mg/L	100
	Alkalinity	5-100, 20-400 mg/L	100
	Carbon Dioxide	1.25-25, 2-40, 5-100 mg/L	200
	Dissolved Oxygen	0.2-1, 0-10 mg/L	50
	Ammonia	0.1-2.5 mg/L	100
	pH Pocket Pal™ Tester	0-14 pH units	200 hours battery life

*1 ppm = 1 mg/L; 1 ppb = 1 µg/L; gpg = grains per gallon; 1 gpg = 17.1 mg/L or 17.1 ppm

Continued on next page.





Surface Water Kit

- By providing economical, easy-to-use tests for ammonia, chlorine, pH, nitrate, dissolved oxygen, phosphorus, and temperature, this kit is an ideal tool for source water monitoring and wastewater treatment plants
- The rugged, lightweight kit includes the convenient pH Pocket Pal™ Tester and all necessary apparatus and reagents
- Uses drop count titration and color disc methods

Prod. No.	Parameter	Range*	No. of Tests
2559833	Ammonia	0.1-2.5 mg/L	100
	Chlorine, Free & Total	0.1-3.5 mg/L	100
	Nitrate	1-50 mg/L	100
	Dissolved Oxygen	0.2-4, 1-20 mg/L	100
	pH Pocket Pal™ Tester	0-14 pH units	200 hours battery life
	Phosphorus	0.02-1, 0.1-5, 1-50 mg/L	100
	Temperature	-1 to 48°C (-30 to 120°F)	unlimited



Fish and Wildlife Conservation/Water Ecology Kit

- Versatile kit was originally designed to meet the needs of fish and wildlife personnel, but is popular in the classroom as well
- One compact carrying case holds reagents, apparatus and instructions for 100 tests each of six parameters: acidity, alkalinity, carbon dioxide, dissolved oxygen, hardness and pH
- pH is determined colorimetrically using a color comparator with color disc; all other tests are done using easy, drop-count titrations

Prod. No.	Parameter	Range*	No. of Tests
180233	Acidity (MO and total or P)	1 drop = 0.133 or 0.33 gpg as CaCO ₃	Up to 100 of each
	Alkalinity (P & M)	0.4-20 gpg as CaCO ₃	Up to 100 of each
	Carbon Dioxide	5-100 mg/L as CO ₂	100
	Dissolved Oxygen	1-10 mg/L as DO	100
	Hardness	0-30 gpg as CaCO ₃	100
	pH	4-10 pH units	300

*1 ppm = 1 mg/L; 1 ppb = 1 µg/L; gpg = grains per gallon; 1 gpg = 17.1 mg/L or 17.1 ppm



A proper balance of water quality parameters is essential for providing recreational water that is microbiologically safe and aesthetically pleasing, yet economical to maintain. Temperature extremes, pool or hot tub usage levels, and effectiveness of the treatment chemicals requires frequent and on-site testing in order to maintain optimum water quality.

Pool and Spa Water Kit

- Includes direct-reading color cubes and ready-to-use reagents for pH and chlorine (or bromine) tests
- Sterile sampling devices and tubed culture medium are provided for the total bacteria count test—a semi-quantitative measurement of bacteria in water

Prod. No.	Parameter	Range*	No. of Tests
2234901	Chlorine (total)	0.5-2.5 mg/L	50
	Bromine Br ₂	1.1-5.5 mg/L	50
	Bacteria	0->1,000 (Total) bact./mL	6
	pH	6.5-8.5 pH units	50



Cyanuric Acid Kit

Model CY-3

- A stabilizing agent for chlorine, cyanuric acid is used in swimming pool treatment
- Measures the turbidity formed in proportion to Cyanuric Acid concentration present in the water sample

Prod. No.	Parameter	Range*	No. of Tests
185102	Cyanuric Acid	20-100 mg/L	100



Free/Total Chlorine and pH Kit

Model CN-67

- Includes color discs and a comparator for monitoring chlorine and pH
- Provides more accuracy than models using color cubes

Prod. No.	Parameter	Range*	No. of Tests
1411100	Chlorine (Free & Total)	0.1-3.5 mg/L	100 F + 100 T
	pH	6.5-8.5 pH units	300



Chlorine and pH Pocket Colorimeter™ II Kit

- Top choice of pool maintenance professionals for reliable, accurate measurements in swimming pool monitoring programs
- Pocket Colorimeter™ II provides hand-held, rugged, waterproof analysis (IP 67 rated at 1m for 30 minutes; excludes battery compartment)
- Datalogs last 10 points with measurement time
- Includes sample cells, reagents, battery, and procedure manual

Prod. No.	Parameter	Range*	No. of Tests
5870012	Chlorine (Free & Total)	0.1-10.0 mg/L	100
	pH	6.0-8.5 pH units	100



*1 ppm = 1 mg/L; 1 ppb = 1 µg/L; gpg = grains per gallon; 1 gpg = 17.1 mg/L or 17.1 ppm

Continued on next page.



Bromine Long-Path Color Cube Kit

- Convenient and economical color cube comparator
- Measures disinfection levels

<u>Prod. No.</u>	<u>Parameter</u>	<u>Range*</u>	<u>No. of Tests</u>
2194000	Bromine Br ₂	0-3.0 mg/L	100



Chlorine and pH Color Cube Kit

Model CN-48B

- Convenient and economical
- Simultaneously measure disinfection levels and pH

<u>Prod. No.</u>	<u>Parameter</u>	<u>Range*</u>	<u>No. of Tests</u>
186302	Chlorine (Total)	0.5-2.5 mg/L	50
	pH	6.5-8.5 pH units	50

Multi-Parameter Pool Master Kit

Model MG/L

- Combines several tests into a single kit: alkalinity, chlorine, hardness, and pH, plus specialized tests for total alkalinity, calcium hardness, and cyanuric acid
- Uses drop count titration and color disc methods



<u>Prod. No.</u>	<u>Parameter</u>	<u>Range*</u>	<u>No. of Tests</u>
2315001	Alkalinity CaCO ₃	20-400 mg/L	100
	Chlorine Cl ₂ (Free & Total)	0.1-3.5 mg/L	100
	Cyanuric Acid	20-100 mg/L	100
	Hardness CaCO ₃	20-400 mg/L	100
	pH	6.5-8.5 pH units	100

*1 ppm = 1 mg/L; 1 ppb = 1 µg/L; gpg = grains per gallon; 1 gpg = 17.1 mg/L or 17.1 ppm

Wastewater treatment plants, water reclamation facilities and industrial pretreatment operations require operators to perform basic process control testing at multiple sites within their facilities. On-site testing and immediate feedback of results can help operators optimize and better understand changes in their treatment process.

Stormwater discharges are contributing to the pollution of the nation's waterways. Point source and nonpoint source stormwater dischargers are required to monitor for potential impact on receiving water bodies.

Wastewater Treatment Plant Laboratory

Model STPL-WRT

- Designed as a complete, self-contained portable laboratory that provides simple measurements for wastewater treatment plant operators
- Includes necessary reagents/equipment to test for temperature, pH, sludge settleability, settleable matter, dissolved oxygen, and chlorine
- Uses drop count titration and color disc methods

Prod. No.	Parameter	Range*	No. of Tests
188703	Chlorine, Total	0.1-3.5 mg/L	100
	Dissolved Oxygen	1-10 mg/L	100
	Settleable Matter	0-1 L (Imhoff cones)	
	Sludge Settleability	0-500 mL (graduated cylinders)	
	pH	4-10 pH units	300
	Temperature	-10 to 110°C	



Storm Water Kit

Model SW-1

- Designed for on-site or laboratory monitoring of storm sewer outflow or industrial discharge
- Use to screen for pollutants after rainfall or snow events to meet stormwater discharge monitoring requirements
- Uses drop count titration and color disc methods

Prod. No.	Parameter	Range*	No. of Tests
2481300	Chlorine, Total	0.1-3.5 mg/L	100
	Copper	0.1-5 mg/L	100
	Detergents	0.05-1 mg/L	32
	pH Pocket Pal™ Tester	0-14 pH units	200 hours battery life
	Phenols	0.1-5, 0.02-1 mg/L	50



Water Conditioning

Many homes and industrial sites require additional treatment or conditioning of their potable source water before it can be used. The water often has aesthetic issues, such as high iron or hardness levels, which must be removed in order to improve water quality. On-site testing or demonstration kits are used to monitor removal efficiency or to promote sales of water conditioning units.

Water Conditioning Sales Aid Hardness Soap “Demo” Kit

Model SO-1

- Uses drop-count methods to demonstrate the relationship of hardness to soap consumption
- Provides an easy, economical, and fast hardness/soap check

Prod. No.	Parameter	Range*
225300	Soap Demonstration	1 drop = 1 gpg as CaCO ₃



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*1 ppm = 1 mg/L; 1 ppb = 1 µg/L; gpg = grains per gallon; 1 gpg = 17.1 mg/L or 17.1 ppm



Water Conditioning "Demo" Kit

Model 15-E

- Provides five key water tests and demonstrations:
 - Soap consumption demonstration for a dramatic display of hardness
 - Softener to demonstrate the benefits of softened water
 - Reagents and apparatus for measurements of hardness, pH, and iron
- Uses drop count titration and color cube methods

Prod. No.	Parameter	Range*	No. of Tests
148201	Soap Demonstration	1-20 gpg as CaCO ₃	50
	Hardness as CaCO₃	1-20 gpg	50-100
	Softener Demonstration	1,600-grain capacity	
	Iron	2-10 mg/L	100
	pH	6.5-8.5 pH units	200



Deluxe Demonstration Kit

Model AD-16E

- Hach's most complete water conditioning test kit: includes tests and demonstrations for seven critical water quality parameters
- In addition to soap consumption and softener demonstrations, includes tests to measure iron, pH, and nitrate
- Also includes the Total Dissolved Solids (TDS) Pocket Pal™ Tester
- Comes complete with a sturdy carrying case and features viewing tubes, water softener, and a compartmentalized reagent cabinet to keep chemistries neat and well-organized

Prod. No.	Parameter	Range*	No. of Tests
148410	Total Dissolved Solids	10-1,990 TDS	200 hours battery life
	Pocket Pal™ Tester		
	Soap Demonstration	1-20 gpg as CaCO ₃	50
	Hardness as CaCO₃	1-20 gpg	50-100
	Softener Demonstration	1,600-grain capacity	
	Iron	0.1-10 mg/L	100
	pH	5.5-8.5 pH units	200
	Nitrate	1-50 mg/L	100

ACCESSORY:
2666000 Softener Regeneration Kit

Water Ecology, Limnology

Water ecology and limnology pertain to the physical, chemical and biological properties of fresh water, especially lakes, ponds and streams. These properties are essential for maintaining water conditions that are capable of supporting aquatic life. Many of these properties require that the measurement be made directly on-site.



Carbon Dioxide, Dissolved Oxygen, and pH Kit

Model CA-10WR with Color Disc

- Carbon Dioxide, Dissolved Oxygen, and pH Kit, Model CA-10WR with Color Disc

Prod. No.	Parameter	Range*	No. of Tests
143801	Carbon Dioxide CO₂	5-100 mg/L	100
	Dissolved Oxygen	1-10 mg/L	100
	pH	4-10 pH units	300

*1 ppm = 1 mg/L; 1 ppb = 1 µg/L; gpg = grains per gallon; 1 gpg = 17.1 mg/L or 17.1 ppm

Acidity, Alkalinity, Carbon Dioxide, Dissolved Oxygen, Hardness, and pH Kit

Model AL-36B

- Extremely versatile, popular kit, designed to meet the needs of fish and wildlife conservation personnel
- Determine pH colorimetrically using a color comparator with color disc; all other tests use easy, drop-count titrations



Prod. No.	Parameter	Range*	No. of Tests
180202	Acidity (MO and total or P)	0.1-7 gpg as CaCO ₃	100 of each
	Alkalinity (P and M)	0.4-20 gpg as CaCO ₃	100 of each
	Carbon Dioxide as CO ₂	5-100 mg/L	100
	Hardness as CaCO ₃	0-30 gpg	100
	Dissolved Oxygen	0.2-20 mg/L	100
	pH	4-10 pH units	300

Acidity, Alkalinity, Carbon Dioxide, Dissolved Oxygen, Hardness, and pH Kit

Model AL-36DT with Digital Titrator

- Digital Titrator and standardized titration cartridges provide laboratory accuracy for field titrations
- Uses a color comparator with color disc for pH measurement



Prod. No.	Parameter	Range*	No. of Tests
2063800	Acidity (MO and total or P)	10-4,000 mg/L as CaCO ₃	100 of each
	Alkalinity (P and M)	10-4,000 mg/L as CaCO ₃	100 of each
	Carbon Dioxide CO ₂	10-1,000 mg/L	100
	Dissolved Oxygen	0->10 mg/L	50
	Hardness as CaCO ₃	10-4,000 mg/L	100
	pH	4-10 pH units	300

*1 ppm = 1 mg/L; 1 ppb = 1 µg/L; gpg = grains per gallon; 1 gpg = 17.1 mg/L or 17.1 ppm

Corrosion Management Kit

Model CM-1

- Uses drop count titration and color disc methods
- Maintain corrosion control of aggressive distribution system waters to meet Lead and Copper Rule Requirements
- Establish baseline conditions to monitor treatment or disinfection strategy changes
- Calculate Langelier and Aggressive Indexes



Prod. No.	Parameter	Range*	No. of Tests
2495700	Alkalinity	2.5-200 mg/L, (P and M) 200-800 mg/L	100
	Calcium, Hardness	2.5-200 mg/L, as CaCO ₃ 200-800 mg/L	100
	Orthophosphate	0.1-5.0 mg/L, 2-50 mg/L	200 hours battery life
	pH Pocket Pal™ Tester	0-14 pH units	100
	Silica	0-40 mg/L, 20-800 mg/L	200 hours battery life
	Temperature Total Dissolved Solids Pocket Pal™ Tester	-20 to 110°C 10-1990 TDS	100

Surface Water Kit

- Ideal tool for source water monitoring and wastewater treatment plants
- Uses drop count titration and color disc methods to provide economical, easy-to-use tests for ammonia, chlorine, pH, nitrate, dissolved oxygen, phosphorus, and temperature
- Rugged, lightweight kit includes the convenient pH Pocket Pal™ Tester and all necessary apparatus and reagents



Prod. No.	Parameter	Range*	No. of Tests
2559800	Ammonia	0.1-2.5 mg/L	100
	Chlorine, Free & Total	0.1-3.5 mg/L	100
	Nitrate	1-50 mg/L	100
	Dissolved Oxygen	0.2-4, 1-20 mg/L	100
	pH Pocket Pal™ Tester	0-14 pH units	200 hours battery life
	Phosphorus	0.02-1, 0.1-5, 1-50 mg/L	100
	Temperature	-1 to 48°C (-30 to 120°F)	unlimited

*1 ppm = 1 mg/L; 1 ppb = 1 µg/L; gpg = grains per gallon; 1 gpg = 17.1 mg/L or 17.1 ppm