

Hach Test Kits: Single Parameter Test Kits

Single Parameter Test Kits

See Inside!

- **Virtually every parameter for your water monitoring needs: Halogens, Heavy Metals, Transition Metals, Dissolved Gases, Disinfectants, pH and Acidity, Salts and Hardness, and more!**
- **Water testing supplies from simple test strips, to color blocks and wheels, to colorimeters and automatic titrators.**



Be Right™

Hach Water Quality Test Strips



Convenient Water Testing Solutions

- Simplify testing and get results in less than 1 minute, in the field or lab
- Eliminate chemical handling and clean-up with simple test strip analysis
- Reduce guesswork by screening samples with Hach test strips



Hach Test Strips At-A-Glance

Parameter	Range*	Steps	# Tests	Product Number
5-in-1 Water Quality Test Strips			Bottle of 50	2755250
Free Chlorine	0-10 mg/L	0, 0.5, 1.0, 2.0, 4.0, 10.0		
Total Chlorine	0-10 mg/L	0, 0.5, 1.0, 2.0, 4.0, 10.0		
Total Hardness (as CaCO ₃)	0-25 gpg	0, 1.5, 3, 7, 15, 25		
	0-425 mg/L	0, 25, 50, 120, 250, 425		
Total Alkalinity (as CaCO ₃)	0-240 mg/L	0, 40, 80, 120, 180, 240		
pH	6.2-8.4	6.2, 6.8, 7.2, 7.8, 8.4 pH units		
Ammonia (see Nitrogen, Ammonia)				
Alkalinity, Total	0-240 mg/L (ppm)	0, 40, 80, 120, 240	50	2744850
Arsenic, Low Range**	0-500 ppb As	0, 10, 30, 50, 70, 300 , 500	100	2800000
Arsenic, EZ, Dual Range†	0-500 ppb As	0, 10, 25, 50, 100, 250, 500	100	2822800
	0-4,000 ppb As	0, 35, 75, 175, 1500, 4000		
Calcium (see Hardness)				
Low Range Chloride (Quantab®)	30-600 mg/L Cl ⁻	10-20 mg/L increments	40	2744940
High Range Chloride (Quantab®)	300-6,000 mg/L Cl ⁻	100-200 mg/L increments	40	2751340
Free & Total Chlorine, Low Range	0-10 mg/L Cl ₂	0, 0.5, 1, 2, 4, 10	50	2745050
Free & Total Chlorine, Low Range	0-10 mg/L Cl ₂	0, 0.5, 1, 2, 4, 10	250‡	2793944
Free Chlorine, High Range	0 to 600 mg/L Cl ₂	0, 25, 50, 100, 200, 400, 600	100	2890200
Copper, Free & Total	0-3 mg/L Cu	0,0.2,0.5,1,3	25	2745125
Hardness, Total (as CaCO ₃)	0-425 ppm, 0-25 gpg	0, 25, 50, 120, 250, 425	1,000‡	2793828
			250‡	2793844
			50	2745250
Iron, Total Dissolved	0-5 ppm Fe	0, 0.15, 0.3, 0.6, 1, 2, 5	25	2745325
Magnesium (see Hardness)				
Nitrogen, Ammonia	0-6 mg/L NH ₃ -N	0, 0.25, 0.5, 1, 3, 6	25	2755325
Nitrate and Nitrite	Nitrate: 0 - 50 mg/L Nitrite: 0-3 mg/L	0, 1, 2, 5, 10, 20, 50 0, 0.15, 0.3, 1, 1.5, 3	25	2745425
pH	4-9 pH	4, 5, 6, 7, 8, 9	50	2745650
	0-14 pH	0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14	100	2601300
Phosphate, Ortho (as PO ₄)	0-50 mg/L PO ₄	0, 5, 15, 30, 50	50	2757150

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

†Cannot determine organic forms of arsenic; sulfide correction only available with purchase of additional reagents. ‡Individually wrapped.



Acidity

Acidity is usually caused by the presence of mineral acids, salts of strong acids, or free carbon dioxide. In surface or ground waters, acidity may be from natural substances or industrial pollution. Excessive levels cause corrosion and can be detrimental to fish. Kit AC-6 reads results in mg/L, with a conversion factor to grains per gallon.

Alkalinity

Caused by the presence of carbonates, bicarbonates, hydroxides, and other dissolved salts, alkalinity is important to drinking water, food, and beverage processors, boiler operators, and aquatic biologists.

Aluminum

Based on the Aluminon method, the Pocket Colorimeter™ II Aluminum Test Kit comes with everything needed for low range aluminum measurement, including a direct reading colorimeter, a rugged carrying case, and enough reagent for 100 tests.

Test	Model	Method/Chemistry	Range (mg/L)*	Smallest Increment (mg/L)*	Approx. No. of Tests	Case Style (See page 310)	Ship. Wt. (lb)	Product Number
Acidity								
Methyl-Orange (MO) & Phenolphthalein	AC-6	Drop count titration/ Sodium hydroxide	5-100 20-400	5 20	100	B	1	222301
(P or Total) as CaCO ₃	AC-DT	Digital Titrator/ Sodium hydroxide	10-4,000	0.1-1.0	100	F	3.5	2064000
Alachlor in Water								
	Pocket Colorimeter™ II	Semiquantitative Colorimeter Immunoassay	0.1-0.5 ppb thresholds		Up to 18	Q	8	2812900
Alkalinity								
Phenolphthalein	Test Strips		0-240 ppm	Steps: 0, 40, 80, 120, 180, 240 ppm	50		0.2	2744850
(P) & Total (MO) as CaCO ₃	AL-AP	Drop count titration/ Sulfuric acid	0.4-8 gpg 1-20 gpg	0.4 gpg 1 gpg	100	B	1	2444300
	AL-AP, MG-L	Drop count titration/ Sulfuric acid	5-100 20-400	5 20	100	B	1	2444301
	AL-TA	Drop count titration/ Sulfuric acid	23-495 gpg 385-8,500	23 gpg 385	100	B	1	2314500
	AL-DT	Digital Titrator/ Sulfuric acid	10-4,000	0.1-10	100 +100	F	3.5	2063700
Aluminum								
As Al ³⁺	Pocket Colorimeter™ II	Colorimeter/ Aluminon	0.01-0.80	0.01	100	R	5	5870025
Ammonia, Nitrogen, low range								
As NH ₃ -N, For freshwater	Cube	Color cube/Salicylate	0.2-0.8	0.2	25	Sealed Bag	1	2266900
	Test Strips		0-6 ppm	Steps: 0, 0.25, 0.5, 1.0, 3.0, 6.0 ppm	25			2755325
Aqua Ammonia								
As NH ₃	N-HRDT	Digital Titrator	5-35% (50-350 g/L)	.034% (.34 g/L)	100	F	5	2930400

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



Alkalinity Test Kit— Model AL-DT
Prod. No. 2063700



Pocket Colorimeter™ II Aluminum Test Kit
Prod. No. 5870025



Aqua Ammonia Test Kit
Prod. No. 2930400

Arsenic — Carbon Dioxide

Arsenic

Arsenic is an element that occurs naturally in the earth's crust. The weathering of rocks and erosion can deposit arsenic in water bodies. Exposure to arsenic at high levels poses serious health effects as it is a known human carcinogen. Hach's Arsenic Kit can measure down to 10 parts per billion of arsenic. Hach offers two arsenic test kits to choose from. The EZ Arsenic Test Kit is more economical and has fewer steps, but generates more hazardous waste. The regular Arsenic Test Kit offers superior accuracy with less hazardous waste. Organic Arsenic can be determined with a simple digestion with the regular kit.

Ascorbic Acid

Model ASC-1 Ascorbic Acid Test Kit was developed in cooperation with beverage producers and uses the drop-count titration method to measure ascorbic acid (vitamin C).

Atrazine

Atrazine is a very popular herbicide that is applied mainly to corn and sorghum crops. The USEPA has set the Maximum Contaminant Level for Atrazine in drinking water at 3 parts per billion. Hach's Atrazine in Water test kit provides semi-quantitative results and can be used to screen a large number of water samples.

Test	Model	Method/Chemistry	Range (mg/L)*	Smallest Increment (mg/L)*	Approx. No. of Tests	Case Style (See page 310)	Ship. Wt. (lb)	Product Number
Arsenic								
	Test Strip†		0-500 ppb	Steps: 0, 10, 30, 50, 100 70, 300, 500 ppb		D	2.5	2800000
	Test Strip (EZ)†		0-500 ppb	Steps: 0, 10, 25, 50, 100 250, 500 ppb		D	2.5	2822800
			0-4,000 ppb	0, 35, 75, 175, 1500, 4000 ppb				
Ascorbic Acid								
	ASC-1	Drop count titration/ Iodometric	10-200	10	100	D	2.5	2308100
Atrazine								
	Pocket Colorimeter™ II	Semiquantitative Colorimeter Immunoassay	0.1, 0.5, 3.0 ppb		up to 18	Q	8	2763500
Benzotriazole - see Triazole, page 307.								
Bromine								
As Br ₂	L-P Cube	Color cube/DPD	0-3.0	0.6	50	Sealed Bag	0.2	2194000
	Pocket Colorimeter™ II	Colorimeter/DPD	0.05-4.50 0.2-10.0	0.01 0.1	100 50	D	2.5	5870001
Calcium - see Hardness, page 296.								
Carbon Dioxide								
As CO ₂	CA-23	Drop count titration/ Sodium hydroxide Phenolphthalein	1.25-25 2-40 5-100	1.25 2 5	200	D	1	143601
	CA-DT	Digital Titrator/ Sodium hydroxide Phenolphthalein	10.1-1,000	0.1, 2.0	50	F	3.5	2064100

*mg/L unless otherwise noted; ppb = µg/L; ppm = mg/L; gpg = grains per gallon; 1 gpg = 17.1 mg/L or 17.1 ppm. †Use for organic forms and sulfide removal.

‡Cannot determine organic forms of arsenic; sulfide correction available with purchase of additional reagents.



Arsenic Test Kit
Prod. No. 2800000



Atrazine Test Kit
Prod. No. 2763500

Chloramination

Monochloramine is commonly used as an alternative to free chlorine for disinfecting drinking water, because it forms less disinfection by-products (DBP) than free chlorine. Hach developed the Indophenol method for Chloramine (Mono), which is very specific for monochloramine. The test involves adding one reagent to the sample, waiting a 5 minute reaction time, and measuring the concentration in a colorimeter or spectrophotometer. See below for monochloramine tests.

Chloride

Found in nearly all natural waters, chloride affects human taste above 250 mg/L. High levels inhibit plant growth, and many industrial processes need to limit chloride concentration. Test kits use either silver or mercuric nitrate titrant. The Model CD-DT, a multi-range kit, is supplied with a demineralizer bottle for high-range sample dilution. Using the same reliable silver nitrate chemistry, Chloride QuanTab® Titrators are ideal for determining quantitative results quickly.

Test	Model	Method/Chemistry	Range (mg/L)*	Smallest Increment (mg/L)*	Approx. No. of Tests	Case Style (See page 310)	Ship. Wt. (lb)	Product Number
Chloramine, Mono and Free Ammonia								
As Cl ₂	Pocket Colorimeter™ II	Indophenol	Monochloramine	0.01	100	D	2.5	5870026
			0.04-4.50 mg/L Free Ammonia 0.02-0.50 mg/L		50			
Chloride								
As Cl ⁻	QuanTab® **	Titration Strip	30-600 ppm	10-20 ppm increments	40		0.2	2744940
	QuanTab® **	Titration Strip	300-6,000 ppm	100-200 ppm increments	40		0.2	2751340
	8-P	Drop count titration/ Silver nitrate	5-100 20-400	5 20	100	B	1	144001
	CD-51	Drop count titration/ Silver nitrate	500-10,000 5000-100,000	500 5000	100	B	1	208601
	CD-DT	Digital Titrator/ Mercuric nitrate	10-8,000	0.1-20	100	F	4	2063500
	CDS-DT	Digital Titrator/Silver nitrate	10-10,000	10	100	F	4	2580600

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

**QuanTab® is a registered trademark of Environmental Test Systems, Inc., a division of Hach Company.



Ammonia/Monochloramine Test Kit
Prod. No. 5870026



Chloride Test Kit- Model CD-51
Prod. No. 208601



Free and Total Chlorine— Model CN-66
Prod. No. 223101



Chlorine— Pocket Colorimeter,™ II
Prod. No. 5870000



Free and Total Chlorine— Model CN-70
Prod. No. 1454200

Definitions of Chlorine Forms

- **Total Chlorine**—Free and combined chlorine
- * **Free Chlorine**—Chlorine present as hypochlorous acid and/or hypochlorite ion
- * **Combined Chlorine**—Chlorine present as monochloramine, dichloramine, nitrogen trichloride, and other chloro-derivatives

Chlorine

The most widely used disinfectant for drinking water, chlorine is also important for sanitizing swimming pools, cooling towers, other industrial equipment, and in the treatment of municipal wastewater. Its measurement and control are vital for both safety and economic reasons.

Many Hach chlorine tests have been accepted by the USEPA for reporting purposes. Test kits containing DPD colorimetric reagent are used most often for monitoring potable water, swimming pools, and waste effluent. Powder DPD dissolves and reacts with chlorine more quickly than tablet-form DPD, giving more accurate results. Powder DPD also has a considerable advantage over orthotolidine, a hazardous substance sometimes used as a chlorine test reagent. It is more stable than liquid DPD reagents, providing more reliable results.

Kits for determining higher levels of chlorine use thiosulfate to measure chlorine titrimetrically.

About Cl₂, Br₂, and I₂ Testing

All of our total chlorine test kits can be used to measure iodine or bromine in the absence of chlorine or other oxidants. Kit method cannot differentiate between halogens (only provides total halogens).

For iodine concentration, multiply test results by 3.58; for bromine, multiply by 2.25. Kits also are available for the direct measurement of bromine and iodine.

Chlorine Dioxide

Monitor ClO₂ levels on-site with the Chlorine Dioxide Test Kit, which uses the reliable and EPA-accepted DPD method to monitor ClO₂ concentration, while eliminating chlorine interference through the addition of glycine. With 100 tests per kit and an available range of 0-2 mg/L and a resolution of 0.1 mg/L, operators can accurately monitor around the 0.8 mg/L regulated limit. Use this kit as a cost-effective method for maintaining optimum chlorine dioxide levels in your plant.

Chlorine — Chlorine Dioxide

Single Parameter Test Kits

Test	Model	Method/Chemistry	Range (mg/L)*	Smallest Increment (mg/L)*	Approx. No. of Tests	Case Style (See page 310)	Ship. Wt. (lb)	Product Number
Chlorine, low range								
As free & total Cl ₂	Pocket Colorimeter™ II ¹	Colorimeter/DPD	0.02-2.00 F&T 0.1-8.0 F&T	0.01 0.1	100	D	2.5	5870000
As free Cl ₂	CN-66F ²	Color disc/DPD	0.1-3.5	0.1	100	B	1	223102
As total Cl ₂	CN-66T ²	Color disc/DPD	0.1-3.5	0.1	100	B	1	223103
As free & total Cl ₂	CN-66 ²	Color disc/DPD	0.1-3.5	0.1	50 F, 50 T	B	1	223101
As free & total Cl ₂	CN-70 ²	Color disc/DPD	0.02-0.7 0.1-3.5	0.02 0.1	100	D	2	1454200
As free Cl ₂	CN-70F ²	Color disc/DPD	0.02-0.7 0.1-3.5	0.02 0.1	200	D	2.5	1454201
As total Cl ₂	CN-70T ²	Color disc/DPD	0.02-0.7 0.1-3.5	0.1 0.02	200	D	2.5	1454202
As free & total Cl ₂	TS	Test Strips	0-10	Steps: 0, 0.5, 1, 2, 4, 10	250 individually wrapped		1	2793944
As free & total Cl ₂	TS	Test Strips	0-10	Steps: 0, 0.5, 1, 2, 4, 10	50		0.2	2745050
As free Cl ₂	Cube	Color cube/DPD	0.5-2.5	0.5	50	Sealed Bag	0.5	2060300
As total Cl ₂	Cube	Color cube/DPD	0.5-2.5	0.5	50	Sealed Bag	0.25	2060400
As free & total Cl ₂	CN-80 ²	Color disc/DPD	0.02-0.7 0.1-3.0 (0-10 mg/L: T only)	0.02 0.1 0.5	100	D	2.5	2129000
As free Cl ₂	AccuVac® Kit ²	Color disc/DPD	0.1-2.5	0.1	25	G	4.08	2502050
Pkg of 25 free chlorine reagent ampules (resupply for Prod. No. 2502050)								2502025
As total Cl ₂	AccuVac® Kit ²	Color disc/DPD	0.1-2.5	0.1	25	G	4.08	2503050
Pkg of 25 total chlorine reagent ampules (resupply for Prod. No. 2503050)								2503025
Chlorine, mid and high range								
As total Cl ₂	CN-65	Drop count titration/Thiosulfate	0.2-4 1-20	0.2 1	100	D	2	225401
	CN-21P	Drop count titration/Thiosulfate	10-200	10	100	B	1	2444400
	CN-DT	Digital Titrator/Thiosulfate	20-2,000	0.2-5.0	100	F	4	2471100
<i>Also see Hypochlorite (Bleach), page 297.</i>								
Chlorine, high range, and pH (Not recommended for regulatory reporting.)								
	Pocket Colorimeter™ II	Colorimeter/DPD Phenol Red	0.1-10.0 Cl ₂ 6.0-8.5 pH	0.1 0.1	100	R	4.8	5870012
<i>Also see Hypochlorite (Bleach), page 297.</i>								
Chlorine Dioxide								
	CLD-2 ²	Color Disc/DPD	0.1-2.0	0.1	100			2842800
	Pocket Colorimeter™ II	DPD/Glycine	0.05-5.00	0.01	100	D	3	5870051

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

¹EPA-accepted for wastewater and potable water. Approved by some states for potable water under specific conditions. Check with your regulatory agency.

²EPA-accepted for potable water. Approved by some states for potable water under specific conditions. Check with your regulatory agency.



Chlorine— AccuVac® Model
Prod. No. 2502050

Find it here... Buy it today on www.hach.com
U.S. customers only.



Chromium — Color

Chromium

Used as a corrosion inhibitor in cooling systems, chromium is also used in surface finishing, leather tanning, and other industries. The most widely used form, hexavalent chromium, is very toxic and strict limits are placed on discharges.

Color

The Hach color test reads the apparent color created by dissolved substances that can indicate industrial, agricultural, or natural pollution.

Test	Model	Method/Chemistry	Range (mg/L)*	Smallest Increment (mg/L)*	Approx. No. of Tests	Case Style (See page 310)	Ship. Wt. (lb)	Product Number
Chromium, low range								
As hexavalent Cr	Cube	Color cube/ Diphenylcarbazine	0.2-1.0	0.2	50	Sealed Bag	0.5	1252700
	CH-8	Color disc/ Diphenylcarbazine	0.1-1.5	0.1	100	D	1	183400
As hexavalent Cr	Pocket Colorimeter™ II ¹	Colorimeter/ Diphenylcarbazine	0.01-0.70	0.01	100	D	2.5	5870017
Pkg of 25 hexavalent chromium reagent ampules (optional resupply for Prod. No. 5870017)								2505025
As hexavalent & total Cr (trivalent by difference)	CH-12 ¹	Color disc/ Diphenylcarbazine, Hypobromite oxidation	0.1-1.5	0.1	50 Cr ⁶⁺ +50 T	F	3	222800
Chromium, high range								
As hexavalent Cr	CH-14	Drop count titration/ Thiosulfate	5-100 50-1000	5 50	100	D	2	222702
Cobalt & Nickel								
	Pocket Colorimeter™ II	Colorimeter/PAN	0.02-2.00 Co 0.01-1.00 Ni	0.01 0.01	100	D	3	5870020
Color								
As color units	CO-1	Color disc/ APHA Platinum – Cobalt Standard	0-100 units 0-500	5 units 25	No Limit	D	1	223400

*mg/L unless otherwise noted, ppb = µg/L, ppm = mg/L.; gpg = grains per gallon; 1 gpg = 17.1 mg/L or 17.1 ppm.

¹EPA-accepted for wastewater. Check with your regulatory agency.



Low Range Chromium- Cube Mode
Prod. No. 1252700



Color Test Kit- Model CO-1
Prod. No. 223400

Copper

Copper may exist in natural waters and effluents as a soluble salt or as suspended solids. A small amount is essential for plants and animals, and concentrations exceeding 0.1 mg/L are useful for controlling algae and plankton growth. Quantities ranging from 0.02 to 0.1 mg/L are toxic for some fish, so its use for treating fish disease requires careful monitoring. Our Long-path Cube Kit (Prod. No. 2193800), sensitive to 0.05 mg/L free copper, is ideal for this use.

Cyanide

The main sources of cyanide, an extremely poisonous substance, are metal-cleaning and electroplating baths, gas scrubbers, gas works, coke ovens, and various chemical processes. This kit uses the popular pyridine-pyrazolone method.

Cyanuric Acid

A stabilizing agent for chlorine, cyanuric acid is used in swimming pool treatment. The CY-3 kit uses reagents and a “dipstick” to measure cyanuric acid concentration.

Test	Model	Method/Chemistry	Range (mg/L)*	Smallest Increment (mg/L)*	Approx. No. of Tests	Case Style (See page 310)	Ship. Wt. (lb)	Product Number
Copper								
	Test Strips		0-3 ppm	Steps: 0, 0.2, 0.5, 1, 3 ppm	25		0.2	2745125
As free Cu	CU-5	Color-disc/Bicinchoninate	0.1-5	0.1	100 F	B	1	1421300
As free & total Cu†	CU-6	Color-disc/Bicinchoninate, Hydrosulfite reduction	0.1-5	0.1	50 F +50 T	B	1	2194100
As free Cu	Pocket Colorimeter™ II	Colorimeter/Bicinchoninate	0.04-5.00	0.01	100	D	2.5	5870019
Pkg of 25 free copper reagent ampules (optional resupply for Prod. No. 5870019)								2504025
Cyanide								
As free CN ⁻	CYN-3	Color disc/Pyridine-Pyrazolone	0.01-0.3	0.01	100	R	2.5	201002
Cyanuric Acid								
	CY-3	Turbidimetry	20-100	20	100	D	2	185102

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

†Test gives total dissolved copper; true total copper requires digestion. Requires Prod. No. 2118669 – Free Copper Powder Pillows; 2118869 – Hydrosulfite Powder Pillows; 2119040 – Graduated Cylinder.



Cyanide Test Kit– Model CYN-3
Prod. No. 201002



Cyanuric Acid Test Kit– Model CY-3
Prod. No. 185102

DEHA — Dissolved Oxygen

DEHA

N,N-Diethylhydroxylamine (DEHA) replaces hydrazine and its derivatives as an oxygen scavenger in steam generation systems.

Detergents

The presence of detergents in surface or ground waters indicates industrial or domestic pollution. In natural waters, anionic LAS and ABS detergents cause excessive foaming, produce undesirable taste and odors, promote growth of disease-producing organisms, and tend to kill aquatic life.

Dissolved Oxygen

Low DO levels usually indicate serious pollution. Adequate amounts are crucial for fish life, but conversely, DO must be excluded from boiler feedwater to prevent corrosion.

Test	Model	Method/Chemistry	Range (mg/L)*	Smallest Increment (mg/L)*	Approx. No. of Tests	Case Style (See page 310)	Ship. Wt. (lb)	Product Number
DEHA								
	DH-1	Color disc/ Iron reduction	1-65 µg/L 5-375 µg/L 22.5-1,700 µg/L	1 µg/L 5 µg/L 22.5 µg/L	100	R	9	2168200
Detergents								
As LAS and/or ABS detergents	DE-2	Color disc/ Toluidine blue-O Chloroform	0-1		32	Q	9	143203
Dissolved Oxygen								
As DO	OX-2P	Drop count titration/ Modified Winkler	0.2-4 1-20	0.2	100 Sample size is 60 mL	D	3	146900
	OX-DT	Digital Titrator/ Modified Winkler	1-10	0.02-0.2	50 Sample size is 300 mL	G	6.5	2063100
	AccuVac® Kit	Color disc/HRDO	0-15	0.2	25	G	4.1	2515050
	Pocket Colorimeter™ II	Colorimeter/ AccuVac®	0.2-10.0	0.1	50	D	4.6	5870003
	Pkg of 25 reagent ampules (resupply for Prod. Nos. 2515050, 5870003)							2515025
	AccuVac® Kit	Color disc/LRDO	0-1000 µg/L	50 µg/L	25	G	4.1	2501050
Ethylene Glycol - see Glycol, page 295.								

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



Dissolved Oxygen— AccuVac® Model
Prod. No. 2515050



Dissolved Oxygen Test Kit— Model OX-2P
Prod. No. 146900



Fluoride

An aid to preventing tooth decay, fluoride is administered to public drinking water supplies at approximately 1 mg/L. Maintenance of the proper concentration is essential in maintaining effectiveness and safety of the fluoridation procedure. Fluoride can also occur naturally—in some cases at problem concentrations.

Formaldehyde

Formaldehyde solutions are used for maintenance of reverse osmosis systems and as disinfectants. The Model FM-1 measures higher concentrations by drop count titration.

Glutaraldehyde

From oil fields to cooling towers, hospitals to food plants, poultry farms to dental offices, Hach's new Glutaraldehyde Kit can help monitor disinfection processes. The kit measures from 0.5 to 4,000 mg/L glutaraldehyde.

Glycol

Ethylene glycol (anti-freeze) contamination of automotive lubricants is an indication of a cracked engine block. Glycol presence also can indicate leaks in cooling systems. Kit Model EG-1 presents a purple color if ethylene glycol and other 1,2 glycols are present in oil or water.

Test	Model	Method/Chemistry	Range (mg/L)*	Smallest Increment (mg/L)*	Approx. No. of Tests	Case Style (See page 310)	Ship. Wt. (lb)	Product Number
Fluoride								
As F ⁻	Pocket Colorimeter/ Colorimeter™ II ¹	Colorimeter/ SPADNS	0.1-2.0	0.1**	25-50	D	5	5870005
		Pkg of 25 fluoride SPADNS AccuVac® Ampules (resupply for Prod. No. 5870005)						2506025
As F ⁻ (Arsenic Free)	Pocket Colorimeter/ Colorimeter™ II ¹	Colorimeter/ SPADNS2	0.1-2.0	0.1**	25-50	D	5	2513100
		Pkg of 25 fluoride SPADNS2 AccuVac® Ampules (resupply for Prod. No. 2513100)						2527025
Formaldehyde								
As CH ₂ O	FM-1	Drop count titration/ Thymolphthalein	0.05-1% 0.5-10%	0.05% 0.5%	100	D	2.5	2183100
Glutaraldehyde								
	GT-1	Color disc	0.5-4000	0.5	100	Q	8.3	2587200
ACCESSORIES REQUIRED Hot Plate, 4.25 x 4.25", 120 Vac								2881400
Glycol								
Ethylene glycol in oil or water	EG-1	Visual/ Appearance of color	Presence or absence of glycol		25	G	3.5	2186400

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

**Greater sensitivity (0.01 mg/L) can be achieved by substituting bottled SPADNS solutions for AccuVac® Ampules supplied with kit.

¹USEPA-accepted for wastewater and potable water. Check with your regulatory agency.



SPADNS Fluoride AccuVac Ampules
Prod. No. 2506025



Formaldehyde Test Kit
Prod. No. 2183100

Hardness

Water hardness is caused almost entirely by calcium and magnesium ions. Other di- and trivalent metals have a similar effect, but usually are not present in high enough concentration in potable waters to cause problems. Hardness increases soap consumption in laundries and causes scale in boilers.

Hardness test kits include test strips, and the inexpensive Models 5-B and 5-EP are designed for homeowners needing quick checks on the efficiency of water softeners. More sophisticated test kits allow the determination of total hardness and also calcium and magnesium (by difference).

Models 5-EP and HA-4P are available in your choice of units: mg/L or gpg.



MOST POPULAR CHOICES!

Test	Model	Method/Chemistry	Range (mg/L)*	Smallest Increment (mg/L)*	Approx. No. of Tests	Case Style (See page 310)	Ship. Wt. (lb)	Product Number
Hardness, total								
As CaCO ₃	Test Strips		0-425 ppm	Steps: 0, 25, 50, 120, 250, 425 ppm	50 250 individually wrapped		0.2	2745250 2793844
	Test Strips		0-25 gpg	Steps: 0, 1.5, 3, 7, 15, 25 gpg	1000 individually wrapped			2793828
	5-B	Drop count titration/EDTA-bulk powder	1-30 gpg	1 gpg	100	L	1	145300
	5-EP	Drop count titration/EDTA-powder pillows	1-30 gpg	1 gpg	100	B	1	145400
	5-EP MG-L	Drop count titration/EDTA-powder pillows	20-400	20	100	B	1	145401
	HA-71A	Drop count titration/EDTA-powder pillows	1-20 1-20 gpg	1 1 gpg	100	D	2.5	145201
	HA-DT	Digital Titrator/EDTA	10-4000	0.1-10	100	F	4	2063600
Hardness, total & Calcium								
As CaCO ₃	HA-4P	Drop count titration/EDTA	1-20 gpg	1 gpg	100	D	3	145700
(Magnesium by difference)	HA-4P MG-L	Drop count titration/EDTA	20-400	20	100	D	3	145701
	HAC-DT	Digital Titrator/EDTA	10-4000	0.1-10	100 Ca +100 T	F	4	2063900
	Test Strips		0-425 ppm	Steps: 0, 25, 50, 120, 250, 425 ppm	1000 individually wrapped			2793828
			0-25 gpg	0, 1.5, 3, 7, 15, 25 gpg				
	Test Strips		0-425 ppm	Steps: 0, 25, 50, 120, 250, 425 ppm	250 individually wrapped			2793844
			0-25 gpg	0, 1.5, 3, 7, 15, 25 gpg				

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



Hardness, Total Test Kit- Model 5-B
Prod. No. 145300



Hardness, Total Test Kit- Model 5-EP
Prod. No. 145400



Hardness, Total Test Kit- Model HA-71A
Prod. No. 145201

Hydrazine

A fuming, oily liquid, hydrazine is used as an oxygen scavenger in high-pressure boiler feedwater. Hach test kits provide information about when to replenish hydrazine.

Hydrogen Peroxide

A disinfectant, hydrogen peroxide is particularly useful as a supplement to the ultraviolet disinfection of water supply systems. Kit Model HYP-1 contains thiosulfate titrant solution for determining peroxide by the drop count method.

Hydrogen Sulfide

Resulting from the anaerobic decomposition of organic matter, hydrogen sulfide is present in many water supplies. Sewage and industrial wastes are other sources of sulfide pollution. Highly toxic, this compound has a characteristic rotten egg odor, which can be detected long before harmful concentrations are reached.

Hypochlorite (Bleach)

Many drinking water plants use bleach for disinfection because it is safer to use and less expensive to ship than gaseous chlorine. However, sodium hypochlorite solutions that exceed 15-trade percent can experience a significant loss of available chlorine within a few days. Because sodium hypochlorite is less stable than chlorine gas and is greatly affected by heat, light, pH, and heavy metal cations, treatment plant operators need to regularly monitor the quality of incoming sodium hypochlorite and the decay rate of the stored product.

The Sodium Hypochlorite Titration Method quickly determines available chlorine in liquid sodium hypochlorite (bleach). Using a stabilized form of prepared sodium thiosulfate titrant, you can complete the test in less than five minutes. Use the Digital Titrator method to monitor samples in the 5 to 15 percent (as Cl_2) range with better than ± 5 percent accuracy or a drop-count test kit when maximum accuracy is not required.

Test	Model	Method/Chemistry	Range (mg/L)*	Smallest Increment (mg/L)*	Approx. No. of Tests	Case Style (See page 310)	Ship. Wt. (lb)	Product Number
Hydrazine								
As N ₂ H ₄	HY-2	Color disc/ p-Dimethylamino- benzaldehyde	0.02-1	0.02	300**	D	2.5	184900
ACCESSORY								
DI Water	177-mL (6 oz) capacity demineralizer bottle, refillable							1429900
Hydrogen Peroxide								
As H ₂ O ₂	HYP-1	Drop count titration/ Thiosulfate	0.2-2 1-10	0.2 1	100	D	2.5	2291700
Hydrogen Sulfide								
As H ₂ S	HS-C	Color chart/ Effervescence of H ₂ S	0-5	0.0, 0.1, 0.3, 0.5, 0.7, 1.0, 2.0, 5.0	18	M	0.5	2537800
As S ²⁻	HS-WR	Color disc/ Methylene blue	0.01-0.55 0.05-2.25 0.25-11.25	0.01 0.05 0.25	60 60 30	D	3.5	223801†
ACCESSORIES								
Treated reagent papers are supplied for 100 tests; effervescence tablets (AlkaSeltzer®) are supplied for 18 tests.								
Purchase additional tablets locally or from Hach (see below).								
Treated Papers					100			2537733
Foil-wrapped package of 36 AlkaSeltzer® tablets (for 18 tests)					18			1453300
Hypochlorite, high range								
(Bleach) As Cl ₂	CN-HRDT	Digital Titrator/Thiosulfate	5-15%	0.05%	100	G	3	2687100
	CN-HR	Drop count titration/ Thiosulfate	5-15%	0.5%	100	D	5	2687200

*mg/L unless otherwise noted; ppb = $\mu\text{g/L}$; ppm = mg/L; gpg = grains per gallon; 1 gpg = 17.1 mg/L or 17.1 ppm.

**Reagents are supplied for 300 tests; enough DI water for 50 tests. Obtain additional DI water locally or use refillable demineralizer bottle.

†Includes a separate Pretreatment Kit for turbid or colored samples.



Hydrogen Sulfide Test Kit— Model HS-C
Prod. No. 2537800



Hydrogen Sulfide Test Kit— Model HS-WR
Prod. No. 223801

Iodine

Often added to process water in poultry plants, iodine is a widely used industrial disinfectant. The long-path cube method allows quick measurement of low iodine concentrations. In the absence of chlorine or other oxidants, chlorine test kits (see pages 291) can also be used to determine iodine.

Iron

In domestic water supplies, iron can do great economic damage by staining laundry and porcelain fixtures and by producing an off taste in beverages. In water supplies used for commercial beverage production, low levels of iron are critical. Hach test kits with TPTZ powder reagent and Hach test strips provide the simplest method for determining low to mid-range iron concentrations.



MOST POPULAR CHOICES!

Test	Model	Method/Chemistry	Range (mg/L)*	Smallest Increment (mg/L)*	Approx. No. of Tests	Case Style (See page 310)	Ship. Wt. (lb)	Product Number	
Iodine									
As I	LP Cube	Long-path cube/DPD	0-2.5	0.5	50	Sealed Bag	0.5	2193900	
Iron, low range									
As Fe**	IR-24	Color disc/FerroZine®	0-0.2 0-1.0	0.002 0.01	100	D	2	255600	
	IR-21	Color disc/TPTZ	0-0.1 0-1.2	0.01 0.05	100	D	2	2299300	
	Pocket Colorimeter™ II	Colorimeter/TPTZ	0.01-1.70	0.01	50-100	D	2.5	5870016	
	Pkg of 25 iron reagent ampules (optional resupply for Prod. No. 5870016)							2510025	
Iron, medium range									
As Fe**		IR-18	Color disc/ 1,10 Phenanthroline	0.1-5	0.1	100	B	1	146400
		IR-18A	Color disc/ 1,10 Phenanthroline	0.02-1	0.02	100	B	2	146500
		IR-18B	Color disc/ 1,10 Phenanthroline	0.2-10	0.2	100	B	1	146401
		Test Strips		0-5 ppm	Steps: 0, 0.15, 0.3, 0.6, 1, 2, 5 ppm	25		0.2	2745325
	Cube	Cube/1,10 Phenanthroline	1-5	1	50	Sealed Bag	0.25	1400800	
	Cube	Cube/1,10 Phenanthroline	2-10	2	50	Sealed Bag	0.25	2543500	
	Pocket Colorimeter™1 II FerroVer® (total Fe)	Colorimeter/ 1,10 Phenanthroline	0.02-5.00	0.01	100	D	3	5870022	
	Pkg of 25 iron reagent ampules (optional resupply for Prod. No. 5870022)							2507025	
	As Fe**	AccuVac® Kit†	Color disc/ 1,10 Phenanthroline	0.2-10	0.2	25	G	4	2507050
As Fe ²⁺ (ferrous iron)	IR-18C	Color disc/ 1,10 Phenanthroline	0.2-10	0.2	100	B	1	2667200	

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

**Dissolved Fe²⁺ and Fe³⁺ detected, digestion required for Total Iron.

†EPA-accepted for wastewater and potable water. Approved by some states for potable water under specific conditions. Check with your regulatory agency.



Iron Test Kit— Model IR-21
Prod. No. 2299300



Iron Color Cube Kit
Prod. No. 1400800



Iron Test Kit— AccuVac® Model
Prod. No. 2507050

Lead

A portable alternative to atomic absorption and/or organic extraction, Hach's LeadTrak® test brings the accuracy and convenience of laboratory testing to the field. Sensitive to less than 5 µg/L, the LeadTrak® test requires no fume hood and produces results in 15 minutes.

Manganese

Manganese causes a bitter taste in water, and at concentrations above 0.1 mg/L, it causes objectionable stains on laundry and plumbing fixtures. Manganese control is also important in the beverage, paper, and textile industries, and in dye production and food processing.

Molybdate

Molybdates are gaining over chromates for use as nontoxic corrosion inhibitors. They are used increasingly in cooling towers.



MOST POPULAR CHOICES!

Test	Model	Method/Chemistry	Range (mg/L)*	Smallest Increment (mg/L)*	Approx. No. of Tests	Case Style (See page 310)	Ship. Wt. (lb)	Product Number
Lead (LeadTrak®)								
	Pocket Colorimeter™ II	Colorimeter/ Fast column extraction	5-150 µg/L	1 µg/L	20	Q	14	5870021
		Lead reagent set for 20 tests (resupply for Prod. No. 5870021)						2375000
Lignin - see Tannin, page 306.								
Manganese								
As Mn	MN-5	Color disc/Cold periodate	0.1-3	0.1	100	D	2	146700
	MN-PAN	Color disc/PAN	0.05-0.7	0.05	50	D	3	2350800
	Pocket Colorimeter™ II ¹	Colorimeter/ Cold periodate	0.2-20.0	0.1	100	D	3	5870015
	Pocket Colorimeter™ II	Colorimeter/PAN	0.01-0.70	0.01	100	D	15	5870018
Magnesium - see Hardness, page 296.								
Molybdate								
As Molybdenum	MO-2	Color disc/ Mercaptoacetic acid	0.2-10 1-50	0.2 1	100	F	3	1419301
	MO-LR	Color disc/ Ternary complex	0.25-3	0.25	100	D	2	2359300
	Pocket Colorimeter™ II	Colorimeter/ Ternary complex	0.02-3.00 0.1-12.0	0.01 0.1	100	D	4.1	5870010
		MolyVer® 6 AccuVac® Ampule Reagent Set for 25 tests (optional resupply for Prod. No. 5870010)						2522098
Monochloramine - see Chloramine, Mono and Free Ammonia, page 289.								

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

¹EPA-accepted for wastewater. Check with your regulatory agency.



Manganese Test Kit— Model MN-5
Prod. No. 146700



Molybdate Test Kit
Prod. No. 2359300

Nickel — Nitrogen, Ammonia

Nickel

Although seldom found in natural waters, nickel is often present in industrial wastewaters as a corrosion product of stainless steel, nickel alloys, and from metal plating baths. The Pocket Colorimeter™ II performs both nickel and cobalt tests.

Nitrogen

Normally found in water or soil as ammonia (NH₃), nitrate (NO₃⁻), and nitrite (NO₂⁻), nitrogen is an indispensable part of the life cycle. However, even though plants, animals, and most microorganisms require some form of combined nitrogen for growth and reproduction, concentrations above certain levels can present problems. Wastewater plants must monitor nitrogen forms and concentrations to assure efficient operation and effective pollution removal.

Nitrogen, Ammonia

A product of microbiological decay of plant and animal protein, ammonia (NH₃) is used in commercial fertilizers. Its presence in raw surface waters usually indicates domestic or agricultural pollution. Above certain levels, it is toxic to fish. Several economical kits are available for testing ammonia in fresh and saltwater.



MOST POPULAR CHOICES!

Test	Model	Method/Chemistry	Range (mg/L)*	Smallest Increment (mg/L)*	Approx. No. of Tests	Case Style (See page 310)	Ship. Wt. (lb)	Product Number
Nickel & Cobalt								
	Pocket Colorimeter™ II	Colorimeter/PAN	001-1.00 Ni 0.02-2.00 Co	0.01 0.01	100	D	3	5870020
Nitrate - see Nitrogen, Nitrate page 301.								
Nitrite - see Nitrogen, Nitrite page 301.								
Nitrogen, Ammonia, low range								
As NH ₃ -N, For freshwater	Cube	Color cube/Salicylate	0.2-0.8	0.2	25	Sealed Bag	1	2266900
	Test Strips		0-6 ppm	Steps: 0, 0.25, 0.5, 1.0, 3.0, 6.0 ppm	25			2755325
Nitrogen, Ammonia, mid range								
For freshwater	NI-8	Color disc/Nessler reagent	0.1-3	0.1	100	B	1	224100
For freshwater or seawater**	NI-SA	Color disc/Salicylate	0.1-2.5	0.1	100	D	1	2428700
As NH ₃ -N, For freshwater	Cube	Color cube/ Nessler reagent	0.5-2.5	0.5	25	Sealed Bag	0.25	1252400
For freshwater or seawater**	Pocket Colorimeter™ II	Colorimeter/Salicylate	0.01-0.80	0.1	100	R	4.1	5870040

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

**For additional seawater test kits, see pages 268-269 (Aquaculture).



Nitrogen, Ammonia Test Kit
Prod. No. 2266900



Nitrogen, Ammonia Test Kit- Model NI-8
Prod. No. 224100

Nitrogen, Nitrate — Nitrogen Pretreatment

Nitrate

Excessive amounts of nitrate or nitrite in water can cause infant death, adult illness, and produce spontaneous abortion in cows. Some wells contain high levels of nitrate. Due to a high degree of technique sensitivity, a standard is highly recommended, see page 204.

Nitrate/Nitrite

When water contains high nitrate levels, nitrites often are present in low concentration.

Nitrite

An intermediate stage in the biological decomposition of nitrogen-containing organic compounds, fairly low levels of nitrite can be harmful to humans and aquatic life. On the other hand, high levels of nitrite are useful as corrosion inhibitors in cooling towers.

Nitrogen Pretreatment Kit

Used with Models NI-11, NI-14, and NI-12 to remove high-level nitrite interference, color, and turbidity from samples.



MOST POPULAR CHOICES!

Test	Model	Method/Chemistry	Range (mg/L)*	Smallest Increment (mg/L)*	Approx. No. of Tests	Case Style (See page 310)	Ship. Wt. (lb)	Product Number
Nitrogen, Nitrate								
As NO ₃ ⁻ -N	 NI-14**	Color disc/ Cadmium reduction	0.02-1 0.2-10	0.02 0.2	50	D	1	1416100
	Cube	Color cube/ Cadmium reduction	0-50	10	50	Sealed Bag		1403700
	 NI-11**	Color disc/ Cadmium reduction	1-50	1.0	100	D	1	146803
	AccuVac® Kit	Color disc/ Cadmium reduction	1-50	1	25	G	4.1	2511050
	Pocket Colorimeter™ II	Colorimeter/ Cadmium reduction	0.4-30.0	0.1	100	D	2.5	5870002
	Pkg of 25 nitrate-N reagent ampules (resupply for Prod. No. 2511050, optional for Prod. No. 5870002)						2.5	2511025
Nitrogen, Nitrate/Nitrite								
	Test Strips		0-50 ppm NO ₃ ⁻ -N 0-3 ppm NO ₂ ⁻ -N	Steps: 0, 1, 2, 5, 10, 20, 50 ppm Steps: 0, 0.15, 0.3, 1, 1.5, 3 ppm	25		0.2	2745425
NO ₃ ⁻ -N/NO ₂ ⁻ -N	NI-12**	Color disc/Cadmium reduction, Diazotization	1-50 NO ₃ ⁻ -N 0.01-0.5 NO ₂ ⁻ -N	1 0.01	100 NO ₃ ⁻ -N +100 NO ₂ ⁻ -N	D	2	1408100
Nitrogen, Nitrite, low range								
As NO ₂ ⁻ -N	Cube	Color cube/Diazotization	0-1.0	0.2	50	Sealed Bag	0.25	2059600
	NI-15	Color disc/Diazotization	0.01-0.5	0.01	100	D	1	2182000
Nitrogen, Nitrite, high range								
As NO ₂ ⁻	 NI-6	Color disc/ Ferrous sulfate	2-100 40-2,000	2 40	100†	D	2	224000
ACCESSORY 177 mL (6 oz) capacity demineralizer bottle								1429900
Nitrogen Pretreatment								
For use with NI-11, NI-14 and NI-12 Kits	PT-1	Bromine/Phenol			100	K	0.5	226800

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

**Nitrogen pretreatment kit is required. †Reagents supplied for 100 tests, but additional DI water is needed for more than 12 samples in the 0-100 mg/L range. Obtain DI water locally or use the refillable demineralizer bottle (Prod. No. 1429900) sold above.



Nitrate and Nitrite Test Strips
Prod. No. 2745425



High Range Nitrate- AccuVac® Model
Prod. No. 2511050



Find it here... Buy it today on www.hach.com
U.S. customers only.



Oxygen, Dissolved — PCB in Soil

Ozone

Controlling disinfectant levels in water, wastewater, and industrial water applications is fast and easy with Hach's ozone test kits. For economical operation, choose the OZ-2 color disc kit. If your application calls for an ozone-specific procedure, select one of our convenient colorimeter test kits. The Pocket Colorimeter™ II instrument and the AccuVac® Test Kit are based on indigo trisulfonate chemistry and will mask interference from chlorine and other oxidizing agents. This indigo method makes ozone analysis easier.

PCB in Soil

For fast environmental monitoring of polychlorinated biphenyls (PCB) in soil, Hach's new PCB in Soil Test Kit allows on-site detection in less than 30 minutes. The kit enables analysts to test contaminated soils on-site and evaluate the progress of remediation. Soil extraction kit included.

Test	Model	Method/Chemistry	Range (mg/L)*	Smallest Increment (mg/L)*	Approx. No. of Tests	Case Style (See page 310)	Ship. Wt. (lb)	Product Number
Oxygen, Dissolved - see Dissolved Oxygen, page 294.								
Oxygen Scavenger								
As DEHA, hydroquinone, erythorbic acid, and methylethylketoxime	OS-1	Color disc/Iron reduction	Variable†		50	R	4.5	2349500
Ozone								
As O ₃	OZ-2	Color disc/DPD	0.1-2.30	0.1	100	B	1	2064400
	AccuVac® Kit	Color disc/Indigo trisulfonate	0.01-0.30	0.01	25	G	4.1	2516050
	AccuVac® Kit	Color disc/Indigo trisulfonate	0.02-0.80	0.02	25	G	4.1	2517050
	AccuVac® Kit	Color disc/Indigo trisulfonate	0.05-1.50	0.05	25	G	4.1	2518050
	Pocket Colorimeter™	Colorimeter/Indigo trisulfonate	0.01-0.25 0.01-0.75	0.01	25	D	4	5870004
	Pkg of 25 low-range ozone reagent ampules (resupply for Prod. Nos. 5870004, 2516050)							2516025
	Pkg of 25 mid-range ozone reagent ampules (resupply for Prod. Nos. 5870004, 2517050)							2517025
Peroxide - see Hydrogen Peroxide, page 297.								
PCB in Soil								
	Pocket Colorimeter™ II	Colorimeter/Immunoassay	1, 5, 10, 50 ppm thresholds		up to 18	Q (2 cases)		2773400

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

†Ranges & increments are similar to DEHA Test Kit (page 271), but are dependent on the oxygen scavenger used.



Oxygen Scavenger Test Kit— Model OS-1
Prod. No. 2349500



Ozone— AccuVac® Model
Prod. No. 2518050

pH

Most natural waters range from pH 4 to pH 9, but commonly are above pH 7 because of carbonates and bicarbonates (alkalinity). The pH of water used in industry, boiler feed water, and swimming pools usually is kept within a narrow range. Choose a kit to monitor the appropriate range—they are all easy to use.

Phosphate

Phosphorus occurs in natural waters as one of the forms of phosphates: ortho- or reactive phosphate, meta- or poly- (condensed) phosphate (requires hot acid digestion), and organic phosphate (requires vigorous digestion). Necessary filtration equipment for clarifying turbid samples is included with kits marked "T" in the "No. of Tests" column. (Continued on next page.)

Test	Model	Method/Chemistry	Range (mg/L)*	Smallest Increment (mg/L)*	Approx. No. of Tests	Case Style (See page 310)	Ship. Wt. (lb)	Product Number
pH, narrow range								
	Cube	Color cube/ Bromthymol blue	5.5-7.5 pH	0.5 pH	50	Sealed Bag	0.25	2067100
	Cube	Color cube/Phenol red	6.5-8.5 pH	0.5 pH	50	Sealed Bag	0.25	1251900
pH, mid range								
	Test Strips		4-9 pH	Steps: 4, 5, 6, 7, 8, 9 pH	50		0.2	2745650
	17G	Color disc/ Mid range indicator	6.5-8.5 pH	0.1 pH	200	B	1	2667400
	17F	Color disc/ Bromthymol blue	5.5-8.5 pH	0.1 pH	200	B	1	147006
	17H	Color disc/Phenol red	6.5-8.5 pH	0.1 pH	200	B	1	147008
	17J	Color disc/Thymol blue	7.8-10.0 pH	0.1 pH	200	B	1	147009
pH, mid range & high range Chlorine								
	Pocket Colorimeter™ II	Colorimeter/ Phenol red, DPD	6.0-8.5 pH 0.1-10.0 Cl ₂	0.1 0.1	100	D	4.8	5870012
pH, wide range								
	17N	Color disc/ Wide range indicator	4-10 pH	0.5 pH	300	B	1	147011
Phenols								
	PL-1	Color disc/ 4-aminoantipyrine	0.02-1 0.1-5	0.02 0.1	100	D	1	2483600
Phosphate, ortho-/meta-								
As PO ₄ ³⁻	PO-23	Color disc/Ascorbic acid for clear samples	0.1-5 1-50	0.1 1	100 C**‡	F	4	224902
	PO-23A	Color disc/Ascorbic acid for clear or turbid samples	0.1-5 1-50	0.1 1	100 C/T**‡	F	3.5	224903
Phosphate, total ortho-/meta-								
As PO ₄ ³⁻	PO-24	Color disc/Ascorbic acid	0.02-1 0.1-5 1-50	0.02 0.1 1	50 C/T**‡	F	4.5	225001

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

**C for Clear samples. **T for Turbid samples.

‡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.

pH Wide-Range Test Kit—Model 17N
Prod. No. 147011



Phosphonate — Phosphorus, Orthophosphate

Phosphate (continued from previous page)

Phosphates enter water supplies from soil runoff, cleaning operations, water treatment, boiler blowdown, and sewage. Although necessary for biological growth, too much phosphate causes excessive growth of aquatic plants and eutrophication. Industrial control includes maintenance of minimum levels in boilers and in cleaning operations. Necessary filtration equipment for clarifying turbid samples is included with kits marked "T" in the "No. of Tests" column.

Phosphonate

The Phosphonate kits use a UV lamp and persulfate to convert the phosphonate value into phosphate for measurement.

Test	Model	Method/Chemistry	Range (mg/L)*	Smallest Increment (mg/L)*	Approx. No. of Tests	Case Style (See page 310)	Ship. Wt. (lb)	Product Number
Phosphonate								
As PO_4^{3-}	PN-10	Color disc/UV photolysis (115 Vac, 60 Hz)	1-5 1-250	1	100	F	10.5	2113300
	PN-10	Color disc/UV photolysis (230 Vac, 50 Hz)	1-5 1-250	1	100	F	11.5	2113302
	PN-10	Color disc (As above but without UV lamp and power supply.)	1-5; 1-250	1	100	F	5	2113301
	Pocket Colorimeter™ II	Colorimeter/UV photolysis 115V lamp	0.1-25.0 1-125	0.1 1	100	Q	14.3	5870007
	Pocket Colorimeter™ II	Colorimeter/UV photolysis 230V lamp	0.1-25.0 1-125	0.1 1	100	Q	14.3	5870008
Phosphorus, Orthophosphate (reactive)								
As PO_4^{3-}	Test Strips		0-50 ppm	Steps: 0, 5, 15, 30, 50	50		0.2	2757150
	Cube	Color cube/Ascorbic acid	1-5	1	50 C**	E	0.25	1252200
	PO-19	Color disc/Ascorbic acid	0.02-1 0.1-5 1-50	0.02 0.1 1	100 C**	R	2.5	224800
	PO-19A	Color disc/Ascorbic acid (Includes filtration for turbid samples.)	0.1-5 1-50	0.1 1	100 C/T**	R	3	224801
	AccuVac® Kit	Color disc/Ascorbic acid	0.1-5	0.1	25 C**	G	4.1	2508050
	Pocket Colorimeter™ II	Colorimeter/Ascorbic acid	0.02-3.00	0.01	100 C**	D	2.8	5870006
	Pkg of 25 orthophosphate reagent ampules (optional resupply for Prod. No. 2508050)							2508025
	PO-14	Color disc/ Stannous	0.1-4.5 1-45	0.1 1	100 C**	D	2.5	147500

Model PO-14 is especially suited for measuring orthophosphate in waters conditioned with Poly-4 or similar orthophosphate compounds.

*mg/L unless otherwise noted; ppb = $\mu\text{g/L}$; ppm = mg/L.; gpg = grains per gallon; 1 gpg = 17.1 mg/L or 17.1 ppm.

**C for Clear samples. **T for Turbid samples.



Phosphate Test Kit— Model PO-19
Prod. No. 224800



Orthophosphate Test Kit— AccuVac® Model
Prod. No. 2508050

Silica

Dissolved silica is found in almost all natural waters. Its presence is undesirable for many industrial uses because of scale formation. High-pressure boiler turbines are especially susceptible. Test kits contain a reagent to remove phosphate interference, as well as reagents for measuring silica.

Test	Model	Method/Chemistry	Range (mg/L)*	Smallest Increment (mg/L)*	Approx. No. of Tests	Case Style (See page 310)	Ship. Wt. (lb)	Product Number
Salinity								
	SA-DT	Digital Titrator/ mercuric nitrate	2-100 ppt	2 ppt	100	D	1	2421800
Silica, low range								
As SiO ₂	SI-7	Color disc/ Heteropoly blue, amino acid	0.02-1.00	0.02	100	D	2.5	2255000
Silica, high range								
As SiO ₂	SI-5	Color disc/ Heteropoly blue amino acid	1-40 20-800	1 20	100	D	2.5	1455400
	Pocket Colorimeter™ II	Colorimeter/ Silicomolybdate	1-100	1	100	D	3	5870034

*mg/L unless otherwise noted; ppb = µg/L; ppm = mg/L.; gpg = grains per gallon; 1 gpg = 17.1 mg/L or 17.1 ppm; ppt = part per thousand.



Salinity Test Kit- Model SA-DT
Prod. No. 2421800



High Range Silica Test Kit - Model SI-5
Prod. No. 1455400

Silver — Tannin / Lignin

Silver

To prevent pollution and economic loss, surface finishers, photographic film manufacturers and processors, and others need to keep close tabs on silver discharges. Kit directions also include the digestion and dilution procedures needed for testing silver strike bath samples.

Sulfate

Widely found in natural waters, sulfate may be at high levels in mine drainage. High concentrations of magnesium or sodium sulfate in water act as cathartics.

Sulfite

Because sulfite oxidizes readily to sulfate, it normally is not present in natural waters. It is used in paper mills for bleaching pulp and in boiler water as an oxygen scavenger.

Tannin/Lignin

A product of decomposed plant material, tannin occurs in natural waters and is used for boiler and cooling tower water treatment, dyeing, ink manufacture, tanning, and paper sizing. Lignin, also a plant product, is found in paper pulp manufacturing waste. Tannin and lignin are analyzed together and reported as mg/L tannic acid.

Test	Model	Method/Chemistry	Range (mg/L)*	Smallest Increment (mg/L)*	Approx. No. of Tests	Case Style (See page 310)	Ship. Wt. (lb)	Product Number
Silver								
As Ag	RapidSilver™	Visual Comparison	5-50 ppb	5 µg/L	100	F	4	2674500
Sulfate								
As SO ₄ ²⁻	SF-1	Extinction/Turbidimetric	50-200	50	100	D	1.5	225100
	Pocket Colorimeter™ II	Colorimeter/Turbidimetric	1-80	1	100	D	3	5870029
	AccuVac® Ampules (alternate reagent for Prod. No. 5870029)							2509025
Sulfide - see Hydrogen Sulfide, page 297.								
Sulfite								
As SO ₃ ²⁻	SU-5	Drop count, titration Iodometric	1-20 10-200	1 10	100	D	2	148002
	SU-DT	Digital Titrator/Iodometric	10-800	0.4-4.0**	100	F	4	2063300
Tannin/Lignin								
As tannic acid	TA-3	Color disc/Tyrosine	0.5-15 5-150	0.5 5	100	R	3	193701

*mg/L unless otherwise noted; ppb = µg/L; ppm = mg/L; gpg = grains per gallon; 1 gpg = 17.1 mg/L or 17.1 ppm. **Digit Multipliers when using Digital Titrators.



Sulfate Test Kit- Model SF-1
Prod. No. 225100



Sulfite Test Kit- Model SU-DT with Digital Titrator
Prod. No. 2063300

TPH in Soil/Water

For personnel responsible for underground storage tanks, off-site waste impounds, petrochemical plants, and waste remediation sites, Hach TPH kits provide fast, accurate results at low levels. The soil kit measures total petroleum hydrocarbons at thresholds above or below 20, 50, 100, and 200 parts per million (ppm). The water kit has thresholds of 2, 5, 10, and 20 ppm. Soil extraction kit included.

Triazole

Benzotriazole and tolyltriazole are used in cooling systems as corrosion inhibitors for copper and copper alloys. Hach's innovative triazole method employs an ultraviolet light-catalyzed reaction that produces a yellow color.

Water-in-Oil

Measurement of low levels of water in oil provides critical data in oil quality determinations, oil line operation, and diesel engine maintenance. The Model WO-1 has proven particularly useful on board ships. Reagent is packaged in unit-dose vials, and parts in contact with the sample are disposable, so clean-up is eliminated.

Zinc

Although essential in our diet, high zinc concentrations in water can irritate the human digestive system. At levels above 5 mg/L, it causes a bitter taste and opalescence in alkaline drinking water. Industrial effluents may contribute large amounts of zinc.

Test	Model	Method/Chemistry	Range (mg/L)*	Smallest Increment (mg/L)*	Approx. No. of Tests	Case Style (See page 310)	Ship. Wt. (lb)	Product Number
TPH in Soil**								
	Pocket Colorimeter™ II**	Colorimeter/Immunoassay	20, 50, 100, 200 ppm thresholds		up to 18	Q (2 cases)	26	2775000
TPH in Water								
	Pocket Colorimeter™ II	Colorimeter/Immunoassay	2, 5, 10, 20 ppm thresholds		up to 18	Q	25	2774200
Triazole								
As benzotriazole	TZ-1	Color disc/UV photolysis or tolyltriazole (115 Vac, 60 Hz)	0.5-15	0.5	50	F	12	2167500
	TZ-1	Color disc/UV photolysis (230 Vac, 50 Hz)	0.5-15	0.5	50	F	12	2167502
	TZ-1	Color disc/UV photolysis As above but without UV lamp and power supply	0.5-15	0.5	50	G	5	2167570
Water-in-Oil								
As %	WO-1	Volumetric displacement/Calcium hydride	0-1% 0-10%	0.05% 0.20%	25	no case	3.5	2237300
Zinc								
As Zn	Pocket Colorimeter™ II	Colorimeter/Zincon	0.02-3.00	0.01	100	R	3.5	5870009†

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

**Soil extraction kit included.

†USEPA-approved for wastewater analysis.



Triazole Test Kit—Model TZ-1
Prod. No. 2167500

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