

Chemicals & Reagents: Alphabetical Listing of Reagents

Alphabetical Listing of Reagents

See Inside!

- **Alphabetical List of Hach Laboratory and Test Kit Reagents**
- **Pure Chemicals**
- **Standard Materials**
- **Specialty Reagents**

...and Much More!



Be Right™

Why Hach Reagents?



The Complete Hach System

When you purchase water analysis reagents from Hach Company, you aren't just buying chemicals—you are buying a complete system that provides confidence in your test results. And no one else can match the proven results of Hach's 60 years of experience providing accurate, practical, and easy-to-use analytical products. Hach is your single source supplier for water analysis.

Hach, your partner in generating reliably accurate analytical results and optimizing your system performance.

Hach Chemical Reagents

- Formulated to minimize interferences, test complexity and analysis time
- Confirmed test performance—by chemists who understand your application
- Designed for Maximum Stability and Consistency
 - Stringent raw material specifications—ensure highest quality product
 - 3-layer foil packaging provides protection from humidity and contaminants—ensuring longer shelf life and stability
- State of the art manufacturing and quality processes—to assure that your reagents will perform exactly as expected, batch after batch
- Rigorous ISO certified process procedures for producing and testing all reagents and ingredients

Hach Instruments

Hach instruments are designed to provide easy, accurate, precise results when used in conjunction with Hach reagents. When you combine Hach instruments and reagents you receive the maximum benefit—using the Hach system assures that we can troubleshoot any issues you may have.

Hach's Easy-to-Use Analytical Procedures

- Instruction for proper sample preparation/storage and matrix-specific adjustments
- Documented method performance data, and NIST traceable standards for accuracy confirmation

Hach Technical Support

Hach's highly skilled Technical Support staff is dedicated to helping you resolve technical issues before, during and after the sale. Contact us by phone at (800) 227-4224, or chat live with a Hach expert at www.hach.com.

There are No Equivalents to the Hach System

Manufacturers who attempt to copy the Hach formula don't understand the details necessary to produce consistent products that perform the same as Hach's in all samples. Use the whole Hach system to assure correct results.

Globally Harmonized System (GHS) Labels

NEW!

Look for changes to the way that Hach products are labeled starting in 2010!

In 2002 the United Nations adopted and published the Globally Harmonized System on Classification and Labeling (GHS), which will cause a worldwide transformation not only in the look of chemical product labeling and MSDSs, but also in the classification of hazards.

How does this affect you? Over the next 12 months, you will start to see changes to labels when you order Hach products. The products are exactly the same, just the labeling has changed. This will provide consistent labeling information to all our customers worldwide.

Key Features of the GHS Label

- Signal Word: Either Danger or Warning
- Hazard Pictogram
 - Square set on point
 - Red border
 - White background
 - Black symbols
- Hazard and Precautionary Statements: in national language(s)



AccuVac® Ampules

Optical-quality, evacuated glass ampules that contain the precise amount of reagent needed for a single test and can be used as the measurement cuvette. Quick, easy, and economical. Snap the tip and the ampule draws in the correct amount of sample.



AccuVac® Ampule

SwifTest™ Reagent Dispenser

The easy way to dispense chlorine reagents for high volume testing. Just squeeze to add reagent. No need to open containers.



SwifTest™
Reagent
Dispenser

TNT (Test 'N Tube™) Vial (16 mm)

Vial chemistry platform that incorporates PermaChem™ powder technology for economical, easy-to-use methods. The right blend of simplicity and economy.

TNTplus™ Vial Chemistries (13 mm)

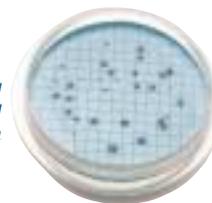
Hach's new spectrophotometers read the vial barcode to automatically select and run the correct method, thus eliminating human error and speeding up analysis. No reagent blank necessary—this saves you time and money.

PermaChem™ Powder Pillows

Prepackaged unit dose reagent with extended shelf life and tightly-controlled weight fill. Our most cost-conscious reagent platform.

Prepared Microbiological Media

Eliminate measuring, mixing, and sterilization.



Prepared
Microbiological
Media

Titration Cartridges

Eliminate glass burets, evaporation, and exposure to contaminants. (For use with Digital Titrator.)

Single and Multi-Parameter Standards

Easy-to-use, no dilutions necessary—combined analytes result in increased efficiency. Typical drinking water and wastewater parameters and concentrations.



TNT
(Test 'N Tube™)

Spec✓™ Standards

No preparation necessary. Colored gels are stable for at least two years. Saves time with easy and quick verification of Hach instrument optical performance. Assures consistent measurement in the field or lab, across multiple operators.



TNTplus™
Chemistries

Voluette® and PourRite® Ampule Standards

Specific analytes contained in a sealed, glass ampule for easy standard additions accuracy checks. The right way to ensure analytical accuracy. Each ampule is designed for one-time use. Prevents accidental contamination of bulk standard solutions.



Due to the nature of their high purity composition, many Hach chemicals have a fixed lifetime within which they must be used. The shelf life of specific chemicals varies from 3 months to 5 years. Hach guarantees our chemicals will carry a minimum of half of their maximum shelf life upon receipt. All chemicals may be returned with 30-days of receipt for full refund.

CHEMICAL STABILITY—WHAT THE DAGGER (†) MEANS

After confirming that you have received the correct chemicals, it is good practice to date chemicals, rotate supplies, and confirm accuracy and performance with periodic checks. It is especially important to check the performance of reagents designated with a dagger (†). All reagents should be stored in a cool, dry place for maximum life. When applicable, the label will note special storage recommendations.

Some products contain mercury or other hazardous materials. Dispose of these items according to local, state, and federal regulations.



PermaChem™
Powder Pillows



Assure confidence in chemical analysis results

Stop questioning the results of laboratory tests. Regular use of standard solutions can ensure laboratory process control, increase analyst confidence, and help provide evidence of performance to inspectors, regulators, and clients.

Three Types of Standards

Single Parameter Standards

Available in a variety of analytes and concentrations, including Voluette Ampule standards to support standard additions procedures for proof of accuracy.

Mixed Parameter Quality Control Standards

Packaged for specific applications and formulated to match the ranges of Hach Methods, so no dilution is necessary.

Spec✓ Standards

Each set of Spec✓ standards contains four vials filled with gels that simulate the test color at various concentrations. These standards provide a quick and easy way to confirm that instruments are operating properly. Standards are available for several popular methods.

What are Standards?

A standard solution can be used in place of a sample because it contains a known concentration of chemicals or analytes. The analyst can run through a testing process knowing what the final value should be. Standards can be used to establish calibration curves, to determine matrix interferences using standard additions, for control charting, and troubleshooting.

Why use Standards?

When a value is questioned, troubleshooting with standards can quickly pinpoint if, and where, there is a problem. Whether a problem is suspected in the reagents, procedure, instrument, or the analyst, the cause of an inaccurate value can be determined and resolved—saving time and money. Regular use of standards can verify all aspects of a system, and alert an analyst to small problems before the entire process gets out of control.

Technical Support

Hach Company offers technical expertise on www.hach.com and through our technical consulting team. We will help you understand the best use of standards and how to develop a quality assurance program for your laboratory. Visit our website, order the Water Analysis Handbook CD (Lit. #WA02) or call our technical consulting staff with questions.

Customer Need	Intended Use/Feature of Standard	Single Parameter Standards	Mixed Parameter Quality Control Standards
Laboratory Maintenance	Calibration Curves Minimum Detection Limits (MDL's) Sample Spikes Program Verification	■ ■ ■ ■	■
Confidence Building	Technician Confidence Operator to operator variability In House QC	■ ■ ■	■ ■ ■
Time/Money/Space Savings	No dilutions necessary with Hach Methods Multiple analytes in one bottle improves efficiency		■ ■

Single Parameter Standards

Alphabetical Listing of Reagents

Hach Single Parameter Standard Solutions

Prod. No.	Standard Solution Parameter	Concentration	Volume	Ampule Volume/Qty	Application*
212132	Acidity	0.500 N	100 mL		DW, E
1427810	Alkalinity	0.500 N		10 mL/16	DW, WM, BC
2305842	Aluminum as Al (NIST)	10 mg/L	100 mL	10 mL/16	DW, WM, WI, BC
1479210		50 mg/L			
1417442		100 mg/L	100 mL		
1457142	Arsenic as As	1000 mg/L	100 mL		DW, WM, WI, E
1461142	Barium as Ba (NIST)	1000 mg/L	100 mL		WI, E
2141342	Benzotriazole	500 mg/L	100 mL		BC
1486510	BOD (NIST) (Glucose plus Glutamic Acid)	300 mg/L		10 mL/16	DW, WM, WI, E
1486610		3000 mg/L		10 mL/16	
2514420	BOD (pre-measured)	150 mg/L		2 mL/20 ez GGA Ampules	WM, WI, E
191442	Boron as B	1000 mg/L	100 mL		WI, BC, E
1402442	Cadmium as Cd (NIST)	100 mg/L	100 mL		DW, WM, WI
2305442	Calcium as Ca (NIST) (for Hardness)	10 mg/L	100 mL		DW, BC, E
4457649		100 mg/L	500 mL		
2240349		1000 mg/L	500 mL		
232516	Calcium (NIST) as CaCO ₃ (CaCl ₂) (for Hardness)	1 mg/L	946 mL		DW, BC, E
2058116		2 mg/L	946 mL		
235616		5 mg/L	946 mL		
2127716		50 mg/L	946 mL		
12153		1000 mg/L	1 L		
218710	10,000 mg/L		10 mL/16		
1427510	Carbon Dioxide as CO ₂	10,000 mg/L		10 mL/16	DW, E
2370853	Chloride as Cl ⁻ (NIST)	100 mg/L	1 L		DW, WM, WI, BC, E
18349		1000 mg/L	500 mL		
1425010		12,500 mg/L			
2630020	Chlorine as Cl ₂ (NIST)	25 to 30 mg/L		2 mL/20	DW, WM, WI, BC, E
1426820		50 to 75 mg/L		2 mL/20	
1426810		50 to 75 mg/L		10 mL/16	
2756707	Chloroform for TTHM analysis	10 ppm		2 mL/7	DW
2605620	Chromium Hexavalent as Cr ⁶⁺ (NIST)	5 mg/L		2 mL/20	DW, WM, WI, BC, E
1425610		12.5 mg/L		10 mL/16	
81042H		50 mg/L	100 mL		
1466442		1000 mg/L	100 mL		
1415142	Chromium Trivalent as Cr ³⁺ (NIST)	50 mg/L	100 mL		DW, WM, E
2150342	Cobalt as Co (NIST)	1000 mg/L	100 mL		WM, WI, E
1218629	COD (NIST)	300 mg/L	200 mL		DW, WM, WI, E
1218649		300 mg/L	500 mL		
2672629		800 mg/L	200 mL		
2253929		1000 mg/L	200 mL		
2602853		15 units	1 L		
141410	500 units		10 mL/16		
141453	500 units	1 L			
2605720	Copper as Cu (NIST)	4 mg/L		2 mL/ 20	DW, WM, WI, BC, E
12932		10 mg/L	100 mL MDB		
1424710		75 mg/L		10 mL/16	
12842		100 mg/L	100 mL		
259342		1000 mg/L	100 mL		
1427110	Detergent as LAS	60 mg/L		10 mL/16	WM, WI
40502	Fluoride as F ⁻ (NIST)	0.2 mg/L	500 mL		DW, WI
40505		0.5 mg/L	500 mL		
40508		0.8 mg/L	500 mL		
29149		1.0 mg/L	500 mL		
29153		1.0 mg/L	1 L		
40512		1.2 mg/L	500 mL		
40515		1.5 mg/L	500 mL		
40520		2.0 mg/L	500 mL		
35949		10 mg/L	500 mL		
23249		100 mg/L	500 mL		
2257310		Formaldehyde as CH ₂ O (NIST)	4000 mg/L		
2058016	Hardness as CaCO ₃ (NIST) also see Calcium	0.50 mg/L	946 mL		DW, WM, WI, BC, E
2058116		2.0 mg/L	946 mL		
47949		20 gpg (340 mg/L)	500 mL		
218710		10,000 mg/L			

* DW = Drinking Water; WM = Wastewater, Municipal; WI = Wastewater, Industrial; BC = Boiler/Cooling Water; E = Environmental
NOTE: These are only suggested applications. Other applications may apply.

Continued on next page.

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U.S. customers only.



Single Parameter Standards

Hach Single Parameter Standard Solutions *Continued*

Prod. No.	Standard Solution Parameter	Concentration	Volume	Ampule Volume/Qty	Application*
13949	Iron as Fe (NIST)	1 mg/L	500 mL	10 mL/16 10 mL/16	DW, WM, WI, BC, E
14049		10 mg/L	500 mL		
1425310		25 mg/L			
1425410		50 mg/L			
1417542		100 mg/L	100 mL		
227142		1000 mg/L	100 mL		
2374820	Lead as Pb (NIST)	10 mg/L	25 mL		DW, WM, WI, E
1261742		100 mg/L	100 mL		
1279642		1000 mg/L	100 mL		
2605820	Manganese as Mn (NIST)	10 mg/L	100 mL	2 mL/20	DW, WI
2112820		25 mg/L		2 mL/20	
1425810		250 mg/L		10 mL/16	
1279142		1000 mg/L			
1419542	Mercury as Hg (NIST)	1000 mg/L	100 mL		DW, WM, WI
1418742	Molybdenum as Mo (NIST)	10 mg/L	100 mL		WI, BC, E
1418642		1000 mg/L	100 mL		
1417642	Nickel as Ni (NIST)	1000 mg/L	100 mL		DW, WM, WI, E
2340249	Nitrite Solution, Stock as N, APHA	250 µg/mL	500 mL		DW, WM, BC, E
189149	Nitrogen-Ammonia as NH ₃ -N	1 mg/L	500 mL	2 mL/20 10 mL/16	DW, WM, BC, E
15349		10 mg/L	500 mL		
1479120		50 mg/L			
1479110		50 mg/L			
2406549		100 mg/L	500 mL		
2128410		150 mg/L			
2109110		160 mg/L			
2354153		1000 mg/L	1 L		
204649	Nitrogen-Nitrate as NO ₃ -N (NIST)	1 mg/L	500 mL	10 mL/16	DW, WM, WI, BC, E
2557810		5 mg/L			
30749		10 mg/L	500 mL		
2415132		15 mg/L	100 mL		
194749		100 mg/L	500 mL		
1426010		500 mg/L			
1279249		1000 mg/L	500 mL		
2664842	Oil & Grease	Hexadecane (99%)	100 mL		WM, WI
2664934		Stearic Acid	500 gm		
256949	Phosphate as PO ₄ ³⁻ (NIST)	1 mg/L	500 mL	10 mL/16	DW, WM, WI, BC, E
2059716		3 mg/L	946 mL		
2059703		3 mg/L	2.9 L		
1420416		10 mg/L	946 mL		
1424342		15 mg/L	100 mL		
1436716		30 mg/L	946 mL		
17110		50 mg/L			
17149		50 mg/L	500 mL		
1436832		100 mg/L	100 mL MDB		
1424210		500 mg/L			
1424232		500 mg/L	100 mL MDB		
2109210		Phosphorus as P (NIST)	25 mg/L		
2321142	1000 mg/L		100 mL		
2351749	Potassium as K (NIST)	100 mg/L	500 mL	10 mL/16	DW, E
1479010		250 mg/L			
2415342	Quaternary Ammonium Compounds as CTAB	100 mg/L	100 mL		BC
2240742	Selenium as Se	1000 mg/L	100 mL		DW, WW, WI, E
2100817	Silica as SiO ₂ (NIST)	0.5 mg/L	3.78 L		DW, BC, E
110649		1 mg/L	500 mL		
140349		10 mg/L	500 mL		
2122531		25 mg/L	236 mL		
111729		50 mg/L	200 mL		
19449		1000 mg/L	500 mL		
1461342	Silver as Ag (NIST)	1000 mg/L	100 mL		DW, WM, WI, E
257849	Sulfate as SO ₄ ²⁻ (NIST)	50 mg/L	500 mL	10 mL/16	DW, WI, E
89149		100 mg/L	500 mL		
2175749		1000 mg/L	500 mL		
1425210		2500 mg/L			
1425249		2500 mg/L	500 mL		
2408449	Sulfite as SO ₃ ²⁻	15 mg/L	500 mL	10 mL/16	DW, WM, WI, BC, E
2267410		5000 mg/L			
	Turbidity (request Lit. #2498)				DW, WM, WI, BC, E
1427010	Volatile Acids as HOAC	62,500 mg/L		10 mL/16	WM
1424610	Zinc as Zn (NIST)	25 mg/L		10 mL/16	DW, WM, WI, BC, E
237842		100 mg/L	100 mL		
1417742		1000 mg/L	100 mL		

* DW = Drinking Water; WM = Wastewater, Municipal; WI = Wastewater, Industrial; BC = Boiler/Cooling Water; E = Environmental
NOTE: These are only suggested applications. Other applications may apply.



Mixed-Parameter Standards

Alphabetical Listing of Reagents

Mixed Parameter Quality Control Standards

Prod. No.	Description	Parameter	Concentration	Volume
2833749	Metals Low Range Drinking Water	Copper Iron Manganese	1 mg/L Cu 0.3 mg/L Fe 0.1 mg/L Mn	500 mL
2833649	Metals High Range Drinking Water	Copper Iron Manganese	2.5 mg/L Cu 1.5 mg/L Fe 5 mg/L Mn	500 mL
2833049	Drinking Water Inorganics	Fluoride Nitrate Phosphate Sulfate	1 mg/L F ⁻ 2 mg/L NO ₃ ⁻ -N 2 mg/L PO ₄ ³⁻ 50 mg/L SO ₄ ²⁻	500 mL
2833449	Low Range Hardness	Total Hardness Calcium Hardness	100 mg/L as CaCO ₃ 50 mg/L as CaCO ₃	500 mL
2833349	High Range Hardness	Total Hardness Calcium Hardness	1000 mg/L as CaCO ₃ 500 mg/L as CaCO ₃	500 mL
2833149	Wastewater Influent Inorganics**	Ammonia Nitrate Phosphate COD Sulfate TOC*	15 mg/L NH ₃ -N 10 mg/L NO ₃ ⁻ -N 10 mg/L PO ₄ ³⁻ 500 mg/L COD 400 mg/L SO ₄ ²⁻ 161 mg/L TOC	500 mL
2833249	Wastewater Effluent Inorganics**	Ammonia Nitrate Phosphate COD Sulfate TOC*	2 mg/L NH ₃ -N 4 mg/L NO ₃ ⁻ -N 2 mg/L PO ₄ ³⁻ 25 mg/L COD 50 mg/L SO ₄ ²⁻ 8 mg/L TOC	500 mL
2833510	Oxygen Demand	BOD COD TOC	396 mg/L BOD 613 mg/L COD 242 mg/L TOC	10 mL ampules

*TOC concentration values may differ from the stated target.

**Call Hach Company for availability.

Spec✓ Standards

Spec✓ Gel Secondary Standard Kits

Prod. No.	Description	Concentration	Unit
2635300	Chlorine, DPD LR	0 to 2.0 mg/L Cl ₂	Set of 4 Vials
2893300	Chlorine, DPD HR	0 to 6.5 mg/L Cl ₂	Set of 4 Vials
2712500	Fluoride	0 to 2.00 mg/L F ⁻	Set of 4 Vials
2507500	Monochloramine/Free Ammonia	0 to 4.5 mg/L Cl ₂ and 0 to 0.50 mg/L NH ₃ -N	Set of 4 Vials
2708000	Ozone, MR	0 to 0.75 mg/L	Set of 4 Vials

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U.S. customers only.



A-1 Broth — Ammonia Nitrogen

A

A-1 Broth Medium, Dehydrated

Broth for 24-hour MPN method for fecal coliforms
2309934 500 g
(See Microbiological Products, pages 229-237 for prepared media.)

Acetate Buffer Solution, pH 4.0

Total Chlorine (Amperometric Method)
1490932 100 mL MDB

Acetate Standard Solution

1000 mg/L as acetic acid. Suitable for use as volatile acid standard
1420542 100 mL

Acetic Acid, Glacial

ACS Grade, CAS No. 64-19-7, C₂H₄O₂, FW = 60.05
10049 500 mL
Assay: ≥99.7%

Acetone

ACS Grade, CAS No. 67-64-1, C₃H₆O, FW=58.08
1442949 500 mL
1442917 4 L (No Air Shipments)

Acid Electrode Cleaning Solution

2975126 50 mL
2975149 500 mL

Acid Detergent Concentrate

For acid detergent fiber test
2164949 500 mL

Acid Reagent Powder Pillows

High range silica 5-mL sample
1454599 100
10-mL sample
2107469 100
2107428 1000/pk
25-mL sample
104299 100
For total chromium
212699 100

Acid Reagent Solution

For sulfite, 2.5N HCl
141832 100 mL MDB

Acidity Reagent Sets

(See Parameters Section page 130 for details.)

Digital Titrator Method

Methyl Orange Endpoint- Bromphenol Blue Indicator; Methyl Orange and Phenolphthalein Endpoints, 10-4,000 mg/L as CaCO₃
2272800 100 tests

Acridine Orange Solution Ampules

Sterile, 2-mL ampules for AODC Procedure
2375620 20

Alachlor in Water Reagent Set

Immunoassay Method
0.1, 0.5 ppb Thresholds
2813000 18 tests

Alkali Buffer, 3.0 N

Used in the determination of calcium and magnesium in brine
2307242 100 mL

Alkali Solution

For colorimetric calcium and magnesium determination
2241732 100 mL MDB
2241756 4 L (No Air Shipments)

Alkaline Cyanide Reagent

For determination of low level manganese
2122326 50 mL SCDB
2122332 100 mL MDB
2122349 500 mL

Alkaline Iodide Reagent

Winkler Reagent in D.O. test
27649 500 mL

Alkaline Iodide-Azide Reagent

For dissolved oxygen
27749 500 mL

Alkaline Iodide-Azide Reagent Powder Pillows

For dissolved oxygen, 300 mL sample
107266 50

Alkalinity Reagent Set

Digital Titrator
Phenolphthalein and Total Alkalinity
10-4,000 mg/L as CaCO₃
2271900 100

Alkalinity Standard Solution (NIST) (25,000 mg/L) CaCO₃

0.500 N, 10-mL Voluette® Ampule
1427810 16

Alkalinity TNTplus™

25-400 mg/L CaCO₃
TNT870 25 tests

AlkaSeltzer Tablets

Without aspirin, for hydrogen sulfide test
1453300 36

Aluminum Reagent Sets

(See Parameters Section page 133 for details.)

Aluminon Method

0.008-0.800 mg/L Al
2242000 100 tests

ECR Method

10 mL sample, 0.002-0.250 mg/L Al
2603700 100 tests
25 mL sample, 0-0.220 mg/L Al
2443400 100 tests

Chromazurol S Method

0.02-0.50 mg/L Al, TNTplus
TNT848 24 tests

Aluminum TNTplus™

Chromazurol S Method, 0.02-0.50 mg/L Al
TNT848 24 tests

Aluminum Standard Solutions as Al (NIST)

10 mg/L
2305842 100 mL
50 mg/L, 10-mL Voluette Ampule
1479210 16
100 mg/L
1417442 100 mL

AluVer® 3 Aluminum Reagent Powder Pillows

1429099 100

Amino Acid Reagent

For silica and phosphate
193432 100 mL MDB
193449 500 mL
193417 3.78 L

Amino Acid Reagent Powder Pillows

For low range silica (0-2 mg/L SiO₂)
25-mL sample
80499 100
80428 1000/pk

Amino Acid F Dilution Solvent

For ultra low range silica
2353011 475 mL

Amino Acid F Reagent Powder Pillows

For silica analysis
10-mL sample
2254069 100
25-mL sample
2253869 100

Amino Acid F Reagent Powder

For ultra low range silica
2651155 55 g

Amino Acid F Reagent Solution

For ultra low range silica analysis
2386420† 20 ampules
2386442† 100 mL

Amino Acid F Reagent Solution Package

For silica analysis
2254117 3.78 L (No Air Shipments)

Ammonia Analysis

Also see Nitrogen-Ammonia

Ammonia Cyanurate Reagent

For Nitrogen, Ammonia Salicylate Method
5-mL sample
2395466 50
10-mL sample
2653199 100
25 mL sample
2395566 50

Ammonia Electrode Filling Solution

For Model 50250 electrode
4447226 50 mL

Ammonia Ionic Strength Adjustor

Powder
4447125 50 g
Powder Pillows
4447169 100
Solution
2824349 500 mL

Ammonia Nitrogen 1 Solution

1455523 25 mL SCDB

Ammonia Nitrogen 2 Solution (Nessler Reagent, extra alkaline)

2119432 100 mL MDB

†Chemical Stability—See page 201.

Ammonia Reagent Sets

(See Parameters Section page 134 for details.)

Nessler Method

0.02-2.50 mg/L NH₃-N
2458200 250 tests

Salicylate Method

10 mL sample, 0.01-0.50 mg/L NH₃-N
2668000 100 tests
 25 mL sample, 0.01-0.50 mg/L NH₃-N
2243700 100 tests

AmVer LR (Salicylate) TNT Method

0.02-2.50 mg/L NH₃-N
2604545 25-50 tests

AmVer HR (Salicylate) TNT Method

0.4-50.0 mg/L NH₃-N
2606945 25-50 tests

Ammonia TNTplus ULR

0.015-2.00 mg/L NH₃-N
TNT830 25 tests

Ammonia TNTplus LR

1-12 mg/L NH₃-N
TNT831 25 tests
 Ammonia TNTplus HR
 2-47 mg/L NH₃-N
TNT832 25 tests

Ammonia, Free, Reagent Sets

(See Parameters Section pages 135-136 for details and starter kits —kits include reagents, instructions and sample cells.)

Free Ammonia Reagent Set

0.02-0.50 mg/L NH₃-N
2879700 50 tests

Free Ammonia Reagent Set

(same as above - 5 each)
2879701 250 tests

Ammonia Salicylate Reagent

For Nitrogen, Ammonia Salicylate Method
 5-mL sample

2395266 50/pk
 10-mL sample
2653299 100/pk
 25-mL sample
2395366 50/pk

Ammonia Standard Solution as NH₃-N

150 mg/L, 10-mL Voluette Ampule
2128410 16

Ammonia Standard Solution as N

100 mg/L
2406549 500 mL
 1000 mg/L
2354153 1 L

Also see Mixed Parameter Quality Control Standards on page 205.

Ammonia TNTplus™, ULR

0.015-2.00 mg/L NH₃-N
TNT830 25 tests

Ammonia TNTplus™, LR

1-12 mg/L NH₃-N
TNT831 25 tests

Ammonia TNTplus™, HR

2-47 mg/L NH₃-N
TNT832 25 tests

Ammonium Chloride

ACS Grade, CAS No. 12125-02-9
 NH₄Cl, FW = 53.49
10501H 454 g

Ammonium Hydroxide

ACS Grade, CAS No. 1336-21-6
 NH₄OH, approx. 58%, FW = 35.05
10649 500 mL
10604 2.5 L
 Assay: ≥28.0 but ≤30% NH₃

Ammonium Hydroxide, 10%

Used to adjust pH in determination of metals
1473632 100 mL MDB
1473649 500 mL

Ammonium Molybdate Reagent

For phosphate
11032H 100 mL MDB
 For silica
193332 100 mL MDB
193317 3.78 L

Ammonium Persulfate

ACS Grade, CAS No. 7727-54-0
 (NH₄)₂S₂O₈, FW = 228.20
11201H 454 g
 Assay: ≥98.0%

Ammonium Purpurate

See Murexide Indicator Powder Pillows

Ammonium p-Toluenesulfonic Acid

(Ammonium-PTSA)
 Protein-TKN standard: 7.402% N,
 46.26% crude protein
2277924 25 g

Anionic Surfactant Solution

For low range phosphate analyzer
2375503 2.9 L

Aqua Ammonia Reagent Set

See Parameter Section page 136 for details.)
 5-35% (=50-350 g/L) NH₃
2930500 100 tests

Arsenic Standard Solution as As

[NaOH matrix]
 1000 mg/L
1457142 100 mL

L-Ascorbic Acid

Analytical Grade, CAS No. 50-81-7
613826 100 g

Ascorbic Acid Powder Pillows

For Aluminum and LR Manganese
1457799 100

Ascorbic Acid Reagents for Phosphate

See Phosphorus, Reactive Rapid Liquid Reagents and PhosVer.

Ascorbic Acid Titrant

For determination of ascorbic acid in juice-based beverages
2308232 100 mL MDB
2308249 500 mL

Atrazine Reagent Set

Immunoassay Method
 0.1, 0.5, 3.0 ppb thresholds
2762700 18 tests

B

Barium Chloride, Dihydrate

BaCl₂•2H₂O, FW=244.28
 ACS Grade, CAS No. 10326-27-9
11401 454 g

Barium Standard Solutions as Ba (NIST)

1000 mg/L (HCl matrix)
1461142 100 mL

BariVer® Barium Reagent

Powder Pillows
1206499 100

BARTs (Biological Activity Reaction Tests)

See Microbiological Products, page 236.

Benzene

ACS Grade, CAS No. 71-43-2
 C₆H₆, FW = 78.11
1444049 500 mL
1444017 4 L

Benzotriazole Reagents

Triazole Reagent Powder Pillows
2141299 100

Benzotriazole Standard Solution (NIST)

500 mg/L
2141342 100 mL

Biochemical Oxygen Demand Nutrient Buffer

(See Nutrient Buffer Pillows)

Biochemical Oxygen Demand Standards

(See BOD Standard Solutions)

Bismuth Nitrate Titration Cartridge

2434501† 0.0200 M

Bleaching 3 Reagent

Powder Pillows for Aluminum
1429449 100

BOD Nitrification Inhibitor

See Nitrification Inhibitor

BOD Nutrient Buffer

See Nutrient Buffer Pillows

BOD Seed Inoculum-Polyseed®

2918700 50 capsules

BOD Standard Solutions (NIST)

For dilution method; glucose plus glutamic acid, 300 mg/L of each, 10-mL Voluette Ampule
1486510 16
 For manometric method; glucose plus glutamic acid, 3000 mg/L of each, Voluette Ampule
1486610 16
 ez GGA pre-measured Glucose plus Glutamic Acid (Dilution Method), equivalent to 150 mg/L GGA for the BOD₅ test, 2 mL ampules
2514420 20

Borate Buffer Solution

APHA, Nitrogen-Ammonia distillation
1470953 1 L

Boric Acid

ACS Grade, CAS No. 10043-35-3
 H₃BO₃, FW = 61.83
71301 454 g

Boric Acid Powder Pillows

For ammonia distillation
1481799 100

†Chemical Stability—See page 201.

Boric Acid — Buffers

Boric Acid Solution (Indicating)

20 g/L for Nitrogen-Ammonia, APHA
2339053† 1 L

Boron Standard Solutions as B (NIST)

1000 mg/L (H₂O matrix)
191442 100 mL

BoroVer® 3 Boron Reagent Powder Pillows

1417099 100

Brilliant Green Bile Broth 2%, Dehydrated

15926 100 g
(See Microbiological Products, pages 229-237 for prepared media.)

Brine, Ca & Mg Hardness Method

HNB Dilution Solvent
2305042 100 mL
Calcium Standard
2305442 10.0 mg/L
Alkali Buffer
2307242 3.0 N
HNB Reagent Package
2307300

Brine, Aluminum Method

Ammonium Fluoride, 30%
2305726 50 mL SCDB
Masking Reagent for Al
2310542 100 mL
ECR Reagents for Al
2310629 200 mL
Buffer Reagent, Al Brine
2310742 100 mL

Brine, Iodine Method

Formate Reagent
2329032 100 mL MDB

Bromcresol Green Indicator Solution

pH indicator: pH 3.8 (yellow)-pH 5.4 (blue)
2329549 500 mL

Bromcresol Green-Methyl Red Indicator

For alkalinity titrations
Powder Pillows
94399 100
Powder
94323 15 g

Bromcresol Green-Methyl Red Indicator Solution

APHA, Alkalinity (Titration Method)
2329236 15 mL SCDB
2329232 100 mL MDB
2329249 500 mL

Bromcresol Purple Indicator Solution

0.02% (alc.)
Standardized for colorimetric pH determination
Range: 5.2 to 6.8
25432 100 mL MDB

Bromine Reagent

DPD Method
DPD Total Chlorine Reagent Powder Pillows
2105669 100 tests
DPD Total Chlorine Reagent AccuVac Ampules
2503025 25 tests

Bromine Water

30 g/L
221120† 25 mL
221149† 500 mL

†Chemical Stability—See page 201.

Bromphenol Blue Indicator

Powder Pillows
pH indicator for acidity and alkalinity titrations
Visual transition interval: pH 3.0 (yellow)-
pH 4.6 (blue)
50-mL sample
1455099 100

Bromphenol Blue Indicator Solution

pH indicator for acidity and alkalinity titrations
Visual transition interval: pH 3.0 (yellow)-
pH 4.6 (blue)
1455232 100 mL MDB

Bromthymol Blue Indicator

Powder Pillows
pH indicator Visual transition interval: pH 6.0
(yellow)- pH 7.6 (blue)
2067299 100

Bromthymol Blue Indicator Solution

Standardized for colorimetric pH determination
pH range 5.5-7.3
25532 100 mL MDB
25549 500 mL

Buffer-Masking Solution

For colorimetric calcium/magnesium determination
in feeds
2229653 1 L

Buffers: pH Standardization

POWDER PILLOWS
Many are color-coded for easy identification.
All prepare 50 mL of buffer. pH is ±0.02 at 25°C.
pH 4.01 (color-coded red) (NIST)
2226966 50
2226964 250
pH 6.00
1405566 pk/50
pH 6.86
1409895 pk/15
pH 7.00 (color-coded yellow) (NIST)
2227066 50
2227064 250
pH 8.00
1407995 pk/15
pH 9.00
1410766 pk/15
pH 10.01 (color-coded blue) (NIST)
2227166 pk/50
2227164 250
pH 4.01 and pH 7.00 (color-coded red and yellow
pillows) (NIST) Contains: 10 pillows of pH 4.01
buffer and 10 pillows of pH 7.00 buffer, for 50 mL
2299264 10 each

SOLUTIONS (color-coded) pH is ±0.02 at 25°C.

pH 4.01 (color-coded red) (NIST)
2283436 15 mL SCDB
2283426 50 mL
2283449 500 mL
2283456 4 L
2283461 20 L
pH 7.00 (color-coded yellow) (NIST)
2283536 15 mL SCDB
2283526 50 mL
2283549 500 mL
2283556 4 L
2283561 20 L
pH 10.01 (color-coded blue) (NIST)
2283636 15 mL SCDB
2283626 50 mL
2283649 500 mL
2283656 4 L
2283661 20 L

9.69

38.35

103.00

9.69

38.35

103.00

SOLUTIONS (color-coded) (NIST): 3-packs

2947600 Includes one each 500mL
of pH 10.01, 7.00, 4.01
2507200 Includes one each 4L of
pH 10.01, 7.00, 4.01
2507300 Includes one each 20L of
pH 10.01, 7.00, 4.01

SOLUTIONS (colorless)

pH is ±0.02 at 25°C. pH 4.01 (NIST)
1222336 15 mL SCDB
1222349 500 mL
1222356 4L
pH 6.86 (NIST)
2973936 15 mL SCDB
pH 7.00 (NIST)
1222249 500 mL
1222256 4 L
pH 9.18 (NIST)
2974036 15 mL SCDB
pH 10.01 (NIST)
1222149 500 mL
1222156 4 L

SINGLET™ SOLUTION PACKS

pH 7.00 and pH 10.01 Buffer Solution
2769820 10 each
pH 4.01 and pH 7.00 Buffer Solution
2769920 10 each
pH 4.01 Buffer Solution
2770020 20 pkg.
pH 7.00 Buffer Solution
2770120 20 pkg.
pH 10.01 Buffer Solution
2770220 20 pkg.

Buffers: Special Use

POWDER PILLOWS
For Alkalinity Standardization
50-mL sample. pH is 4.5 ±0.05 at 20°C
89568 25
For Heavy Metals, Citrate type
1420299 100
For Iron, Citrate type
2081599 100
**For Manganese, cold periodate method.
Citrate type**
10-mL sample
2107669 100
25-mL sample
98399 100

SOLUTIONS

Acetate Buffer Solution
pH 4.0 for Chlorine
(Amperometric Method)
1490932 100 mL MDB
For Aluminum in Brine
2310742 100 mL
For Amperometric Chlorine
Phosphate type, pH 7, APHA
2155332 100 mL MDB
2155353 1000 mL MDB
For BOD
APHA, pH 7.2. Phosphate type
43149 500 mL
For Detergents, Lab Test
Sulfate type, pH 2.0 ± 0.1 after 1:30 dilution
45249 500 mL
For Detergents, Kit Method
Wash water for test kit detergents test
99949 500 mL
Hardness Buffer, Aminoethanol Type
Suitable for use in APHA Hardness Test
2311149 500 mL
Hardness 1 Buffer
pH 10.1 ± 0.1 at 20°C
42426 50 mL SCDB
42432 100 mL MDB
42449 500 mL
42453 1 L
For Preparing Monochloramine Standards
pH 8.3
89868 25/pkg

C

Cadmium Reagent Sets

(See Parameters Section page 140 for details.)

Colorimetric Method

Dithizone Method, 0.7-80 µg/L Cd
2242200 100 tests (No Air Shipments)
 Air Freight Configuration
2242201 100 tests
 Cation Method, 0.02-0.30 mg/L Cd, TNTplus
TNT852 25 tests

Cadmium Standard Solutions as Cd (NIST)

100 mg/L
1402442 100 mL

Cadmium TNTplus™

Cation Method, 0.02-0.30 mg/L Cd
TNT852 25 tests

Calcium Separation Set

For use with TNTplus TNT852 Cadmium test
TNT892 25 tests

Calcium and Total Hardness

See *Hardness Reagent Sets*

Calcium Carbonate

Primary Standard, ACS Grade
 CAS No. 471-34-1 CaCO₃, FW = 100.09
12014 113 g
12001 454 g
 Assay: ≥99.0%

Calcium Chloride Solution

APHA, BOD nutrient
42849 500 mL

Calcium/Magnesium Indicator Solution

For colorimetric calcium and magnesium determinations in water. (For determinations in food and feed samples, see Calmagite Solution.)
2241832† 100 mL MDB
2241856† 4 L

Calcium Reagents

See *Hardness (Calcium) Reagent Sets*.

Calcium Reference Electrolyte Solution Cartridge

Not for use with 48000 or 50000 series electrodes
2195001

Calcium Standard Solutions as Ca

10.0 mg/L
2305442 100 mL (NIST)
 100 mg/L
4457649 500 mL (NIST)
 1000 mg/L (HCl matrix)
2240349 500 mL (NIST)

Calcium Standard Solutions (NIST) as CaCO₃ (CaCl₂)

1 mg/L
232516† 946 mL
 2 mg/L
2058116† 946 mL
 5 mg/L
235616† 946 mL
 50 mg/L
2127716† 946 mL
 1000 mg/L
12153† 1 L
 10,000 mg/L, 10-mL Voluette Ampule
218710 16

Calmagite

[1-(1-Hydroxy-4-methyl-2-phenylazo)-2-naphthol-4-sulfonic acid]
 Analytical Grade, CAS No. 3147-14-6
 Indicator for calcium and magnesium
 C₁₇H₁₄N₂O₅S•H₂O, FW = 376.37
82522 5 g
 Assay: ≥60%

Calmagite Solution

For colorimetric calcium and magnesium determinations in food and feed samples 0.003%
2230356 4 L

CalVer® 2 Calcium Indicator

For calcium determination using EDTA titration
 Powder
28114H 113 g
28101H 454 g
 Powder Pillows
94799 100 (Test kit)
85299 100 (Dig. Titr. or buret)

Carbon Dioxide Reagent Sets

Digital Titrator Method
 Range: 10-1000 mg/L as CO₂
 (0.3636 N and 3.636 N titrants)
2272700 100 tests

Drop Count Titration Method
 Range: 0-100 mg/L as CO₂
2437500 100 tests

Carbon Dioxide Standards as CO₂ (NIST)

100 mg/L
226142† 100 mL
 10,000 mg/L, 10-mL Voluette Ampules
1427510 16

Cartridge Assembly, Complete, Empty

For your own reagents when using the Digital Titrator.
1449501 each

CDTA (Cyclohexanediaminetetraacetic acid)

Free Acid, ACS Grade, chelating agent
 CAS No. 87095-89-4
700726 100 g
 Assay: ≥98% as monohydrate

CDTA Cartridges for Digital Titrator

1440201 0.08 M
 Digits x 0.1 = mg/L CaCO₃ in 100 mL
 Digits x 0.0001 = mmole
1440301 0.800 M
 Digits = mg/L CaCO₃ in 100 mL
 Digits x 0.001 = mmole

CDTA Disodium Magnesium Salt

(Cyclohexanediaminetetraacetic acid, disodium magnesium salt) Trihydrate
 C₆H₁₀N₂(CH₂COO)₄Na₂Mg•3H₂O, FW = 466.64
 Analytical Grade, CAS No. 63451-33-2
 Assay: ≥95%
 Powder
1408026 100 g
 Powder Pillows
1408099 100 powder pillows

CDTA Solution

For ultra low range hardness
2589636 10 mL SCDB
 For use with Molybdenum (MolyVer)
 AccuVac Ampules, 0.4 M
2615436 15 mL SCDB

CDTA Titrant (HexaVer®)

Standard Solution, 0.020 N (0.010 M)
74053 1 L
74056 4 L

Ceric Standard Cartridge for Digital Titrator

2270701† 0.500 N
 Digits x 0.105 = g/L H₂O₂ in 0.1 mL
 Digits x 0.000625 = meq

Charcoal

Decolorizing carbon, powdered, for plant tissue and soil sulfate testing
2052626 100 g

Chelants Reagents

See *Parameters Section* page 143.

Chemical Oxygen Demand

See *COD*

Chloramines, Mono

Low Range 0.04-4.50 mg/L as Cl₂
 Monochlor F Reagent Pillow
2802246 50
 High Range 0.1-10.0 mg/L as Cl₂, TNT
2805145 25-50 tests

Chloride 2 Indicator

Powder for argentometric (silver nitrate) methods
 Powder
104320 28.3 g
 Powder Pillows
 For test kit
104399 100
 For 100 mL sample
105766 50

Chloride Reagent Sets

(See Parameters Section page 143 for details.)

Colorimetric Method

Mercuric Thiocyanate Method
 Range: 0.1-25.0 mg/L Cl⁻
2319800 100 tests

Digital Titrator Method

Silver Nitrate Method
 Range: 10-100 mg/L as Cl⁻
 (0.2256 N titrant)
2444100 100 tests
 Range: 100-10,000 mg/L as Cl⁻
 (1.128 N titrant)
2444200 100 tests

Range: 10-10,000 mg/L as Cl⁻; 2.5-150 g/L as Cl⁻ in Surface Finishing Solutions (0.2256 N and 1.128 N titrants)
2288000 100 tests

Mercuric Nitrate Method

Range: 10-8,000 mg/L Cl⁻
2272600 100 tests

Drop Count Titration Method

Silver Nitrate Method
 Range: 0-400 mg/L as Cl⁻
 (0.0493 N titrant)
2437600 100 tests

Buret Method

See Parameters Section page 144 for reagents.

Chloride Standard Solutions as Cl⁻ (NIST)

100 mg/L (0.00282 N)
2370853 1 L
 1000 mg/L
18349 500 mL
 12,500 mg/L, 10-mL Ampule
1425010 16

†*Chemical Stability—See page 201.*

Chloride — Chromium

Chloride Titrant

Silver nitrate-for low range test kit
39732 100 mL MDB
Silver nitrate, 0.0493 N
2349832 100 mL MDB
Silver nitrate, 1.88 N
2349432 100 mL MDB

Chlorine, Free

DPD Free Chlorine AccuVac Ampules
2502025 25
DPD Free Chlorine Reagent Powder Pillows
5-mL sample
2197846 50
1407799 100
1407728 1000-pac
10-mL sample
2105569 100
2105503 300
2802300 SwifTest bulk dispenser,
250 tests
2105560 SwifTest replacement
Vial, 250 tests
2105528 1000-pac
25-mL sample
1407099 100
1407028 1000-pac

Chlorine, Free, Rapid Liquid™ Reagents

For rapid liquid chlorine (DPD), 0-2 mg/L
Reagent Set (CL17) Contains one each of the
following items.
2556900 450+ tests
DPD Indicator Powder
2297255 24 g
Free Chlorine
Indicator Solution
2314011 473 mL
Free Chlorine Buffer Solution
2314111 473 mL

Chlorine (Free and Total) Reagent Sets

(See Parameters Section pages 144-147 for details.)

Colorimetric Method

DPD Method
Range: 0-2.00 (Free), 0-3.5 (Total) mg/L as Cl₂ for
10-mL sample
2459500 100 tests
Range: 0-3.5 mg/L as Cl₂ for 5-mL sample
2438800 100 tests

Digital Titrator Method

FEAS Titration Method
Range: 0-3+ mg/L as Cl₂
2445300 100 tests

Chlorine, Free, Test 'N Tube

DPD Method
0.09-5.00 mg/L Cl₂
2105545 50 tests

Chlorine, Free TNTplus™

0.05-2.00 mg/L
TNT866 39 tests

Chlorine, Free & Total TNTplus™

0.05-2.00 mg/L
TNT866T 39 tests

Chlorine, Total

DPD Total Chlorine AccuVac Ampules
2503025 25
DPD Total Chlorine Reagent Powder Pillows
5-mL sample
2198246 50
1407699 100
1407628 1000-pac
10-mL sample
2105669 100
2105603 300
2802400 SwifTest bulk dispenser,
250 tests
2105660 SwifTest replacement
Vial, 250 tests
2105628 1000-pac
25-mL sample
1406499 100
1406428 1000-pac

Chlorine, Total, Rapid Liquid™ Reagents

Reagent Set (CL17) Contains one each of the
following items.

2557000 450+ tests
2297255 24 g
Total Chlorine Indicator Solution
2263411 473 mL
Total Chlorine Buffer Solution
2263511 473 mL

Chlorine, Total, Test 'N Tube

DPD Method 0.09-5.00 mg/L Cl₂
2105645 50 tests

Chlorine (Total) Reagent Sets

(See Parameters Section pages 144-147 for details.)

Buret Titration Method

Amperometric Method
Range: 0-10 mg/L as Cl₂
2460700 100 tests

Digital Titration Method

Iodometric Method
Range: 20-2000 mg/L as Cl₂
(0.113 N titrant)
2272500 100 tests
Range: 2000-70,000 mg/L as Cl₂
(2.0 N titrant)
2444800 100 tests

Drop Count Titration Method

Thiosulfate Method
Range: 0-20 mg/L as Cl₂
(0.00246 N titrant)
2438600 100 tests
Range: 0-200 mg/L as Cl₂
(0.0246 N titrant)
2437700 100 tests

Chlorine, Total - ULR

(See Parameters Section page 144 for details.)

DPD Method

2-500 µg/L as Cl₂
ULR Chlorine Reagent Set
2563000
ULR Chlorine Quick Filter Apparatus Set for
Wastewater
2595600

Chlorine Dioxide Reagent 1

For ClO₂ determination, CPR Method
2070042 100 mL

Chlorine Dioxide Reagent 2

For ClO₂ determination, CPR Method
2070142 100 mL

Chlorine Dioxide Reagent 3

For ClO₂ determination, CPR Method
2070242 100 mL

Chlorine Dioxide Reagent Set

(See Parameters Section page 148 for details.)

Chlorophenol Red Method

0.01-1.00 mg/L ClO₂
2242300 100 tests

DPD/Glycine Method

AccuVac Ampules 0.04-5.00 mg/L ClO₂
2771000 25 tests
Powder Pillows 0.04-5.00 mg/L ClO₂
2770900 100 tests

Chlorine Standard Solution as Cl₂ (NIST)

25-30 mg/L, 2-mL PourRite Ampule
2630020 20
50-75 mg/L, 2-mL PourRite Ampule
1426820 20
50-75 mg/L, 10-mL Voluette Ampule
1426810 16

Also see SpecV Gel Secondary Standards
on page 205.

Chloroform

ACS Grade, CAS No. 67-66-3
CHCl₃, FW = 119.38
1445849 500 mL
1445853 1 L
1445817 4 L (No Air Shipments)
Assay: ≥99.8%

Chloroform Standard Solution

10 ppm 2 mL ampules
2756707 7/pkg

Chlorophosphonazo Reagent

For ultra low range hardness
Solution Pillows
2589599 100
Bulk Solution
2589549 500 mL

2-Chloro-6 (Trichloromethyl) Pyridine(TCMP)

(N-Serve®) Analytical Grade
CAS No. 1929-82-4
For prepared formula that is water soluble, see
Nitrification Inhibitor, Formula 2533™
C₈H₃Cl₃N, FW = 230.9
257924 25 g

Chromate Reagent Set

Digital Titrator Method
Range: 20 to 400 mg/L as CrO₄
2272400 100 tests

ChromaVer® 3 Chromium Reagent

Range: 0.010 - 0.700 mg/L Cr⁶⁺
AccuVac Ampules
2505025 25
Powder Pillows 5-mL or 10-mL sample
1271099 100
1271028 1000-pac
25-mL sample
1206699 100
1206628 1000-pac

Chromic Acid Cleaning Solution

For cleaning glassware (no dilution necessary)
123349 500 mL

Chromium, Hexavalent

(See ChromaVer® 3 Chromium Reagents)

Chromium, Hexavalent and Total TNTplus™

0.03-1.00 mg/L Cr
TNT854 25 tests

Chromium, Hexavalent, Standard Solutions as Cr⁶⁺ (NIST)

5 mg/L, 2-mL PourRite™ Ampule	
2605620	20
12.5 mg/L, 10-mL Voluette Ampule	
1425610	16
50 mg/L	
81042H	100 mL
1000 mg/L (H ₂ O matrix)	
1466442	100 mL

Chromium, Total, Reagent Sets

(See Parameters Section page 149 for details.)

Colorimetric Method

1,5-Diphenylcarbohydrazide Method	
Range: 0.01-0.70 mg/L as total chromium	
25-mL sample	
2242500	100 tests
Range: 0-1.5 mg/L as total chromium	
25-mL sample	
Includes demineralized water	
2242501	100 tests

Chromium, Trivalent, Standard Solutions as Cr³⁺ (NIST)

50 mg/L	
1415142	100 mL

Chromium 1 Reagent Powder Pillows

204399	100
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Chromium 2 Reagent Powder Pillows

204499	100
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Citric Acid Powder Pillows

For silica analysis	
5-mL sample	
1454999	100
10-mL sample	
2106269	100
2106228	1000-pac
25-mL sample	
1454899	100
1454828	1000-pac

Citric Acid F Reagent Solution

For ULR silica	
2254232	100 mL MDB
2254249	500 mL

Cleaning Solutions

Acid probe cleaning solution	
2975126	50 mL
2975149	500 mL
Non-ionic probe rinse solution	
Probe cleaning solution for proteins	
2964349	500 mL bottle
Non-ionic probe rinse solution	
2964449	500 mL

Cobalt Chloride Solution

For spectrophotometer linearization	
1422249	500 mL

Cobalt/Nickel Reagent Set

Colorimetric Method	
PAN Method 0.02-2.00 mg/L Co	
For 25-mL sample	
2242600	100 tests
10-mL sample	
2651600	100 tests

Cobalt Standard Solution as Co (NIST)

1000 mg/L (HNO ₃ matrix)	
2150342	100 mL

COD Digestion Vials, Dichromate

Reactor Digestion Method 16 mm	
Ultra Low Range (0.7-40.0 mg/L COD)	
2415825	25
2415815	150
Low Range (3-150 mg/L COD)	
2125825	25
2125815	150
High Range (20-1500 mg/L COD)	
2125925	25
2125915	150
High Range Plus (200-15,000 mg/L COD)	
2415925	25
2415915	150

See the ezCOD recycling service on page 152.

COD Digestion Vials, Manganese III

Reactor Digestion Method 16 mm, 30-1000 mg/L	
2623425	25
2623415	150
Chloride Removal Cartridges	
(for use with Manganese III COD Vials)	
2661825	25
2661815	150

COD2 Digestion Vials, Dichromate

Mercury-Free Formulation 16 mm	
Low Range (3-150 mg/L COD)	
2565025	25
High Range (20-1500 mg/L COD)	
2565125	25
2565115	150
Ultra High Range (200-15,000 mg/L COD)	
2834325	25/pk

COD Standard Solution (NIST)

300 ± 15 mg/L as COD	
1218629†	200 mL
1218649	500 mL
800 mg/L as COD ± 40 mg/L	
2672629	200 mL
1000 ± 50 mg/L as COD	
2253929	200 mL
Oxygen Demand QC Mixed-parameter standard, 10 mL ampules	
2833510	16/pk

COD TNTplus™ 13 mm

ULR, 1.0-60.0 mg/L COD	
TNT820	24 tests
LR, 3-150 mg/L COD	
TNT821	25 tests
TNT82106	150 tests
HR, 20-1500 mg/L COD	
TNT822	25 tests
TNT82206	150 tests
UHR, 250-15,000 mg/L COD	
TNT823	25 tests

See the ezCOD recycling service on page 152.

COD, Mercury-Free TNTplus™ HR

25 to 1,000 mg/L	
TNT825	25 tests

Coliform Medium, Prepared

See *Microbiological Products*, pages 229-237 for prepared media.

Color Standard Solution

15 platinum-cobalt units	
2602853	1 L
500 platinum-cobalt units	
141453	1 L
141410	10-mL Voluette Ampules
	16/pk

Conductivity Standard Solutions

See *Sodium Chloride, Potassium Chloride, and Natural Water Standard Solutions*

Copper Masking Reagent Powder Pillows

For Copper Porphyrin method	
10 mL sample	
2603449	100
25 mL sample	
2187399	100

Copper Reagents

See *CuVer® 1 Copper Reagents, CuVer® 2 Copper Reagents*.

Copper Reagent Powder Pillows

(Bicinchoninate) For free copper determination in salt and fresh water, 25 mL sample	
2118669	100

Copper Reagent Sets

Also see *CuVer Copper Reagent*. (See Parameters Section page 154 for details.)

Colorimetric Method

Free and Total (Bicinchoninate) Method,	
0-5 mg/L 25 mL sample	
2439200	100 tests
Porphyrin Method, 2-210 µg/L	
10-mL sample	
2603300	100 tests
25-mL sample	
2242700	100 tests

Copper Sensor Pack

For HSA-1000 Analyzer	
5040200	10 tests

Copper Standard Solutions as Cu (NIST)

4 mg/L, 2-mL PourRite Ampule	
2605720	20
10 mg/L	
12932	100 mL MDB
75 mg/L, 10-mL Voluette Ampule	
1424710	16
100 mg/L	
12842	100 mL
1000 mg/L (HNO ₃ matrix)	
259342	100 mL

Also see *Mixed Parameter Quality Control Standards on page 205*.

Copper TNTplus™

Bathocuproine Method 0.1 to 8.0 mg/L	
TNT860	25 tests

Copper Sulfate-Sulfamic Acid Inhibitor Solution

For APHA dissolved oxygen	
35732	100 mL MDB
35749	500 mL

CuVer® 1 Copper Reagent

Bicinchoninate Method	
For copper (0.04-5.00 mg/L Cu)	
Powder Pillows 5-mL sample	
1421199	100
10-mL sample	
2105869	100
2105828	1000-pac
25-mL sample	
1418899	100
1418828	1000-pac

CuVer® 2 Copper Reagent

For copper in the presence of high levels of aluminum, calcium, and iron. Calibrations for CuVer® 1 may be used. 0.04-5.00 mg/L Cu
AccuVac Ampule
2504025 25
 Powder
2188226 100 g
 Powder pillows for 25-mL sample
2188299 100

Cyanide Reagent Sets

(See Parameters Section page 155 for details.)

Colorimetric Method
 Pyridine-Pyrazolone Method,
 0.002-0.240 mg/L CN⁻
 10-mL sample
2430200 100 tests
 25-mL sample
2242800 100 tests

CyaniVer 3 Cyanide Reagent Powder Pillows

10 mL sample 0.002-0.240 mg/L CN⁻
2106869 100
 25 mL sample 0.002-0.240 mg/L CN⁻
1403969 100

CyaniVer 4 Cyanide Reagent Powder Pillows

10 mL sample 0.002-0.240 mg/L CN⁻
2106969 100
 25 mL sample 0.002-0.240 mg/L CN⁻
1404099 100

CyaniVer 5 Cyanide Reagent Powder Pillows

10 mL sample 0.002-0.240 mg/L CN⁻
2107069 100
 25 mL sample 0.002-0.240 mg/L CN⁻
1404169 100

Cyanuric Acid

(2,4,6-Trihydroxy-1,3,5-triazine)
 CAS No. 108-80-5 Chlorine stabilizer
 $C_3H_3N_3O_3$, FW = 129.08
712924 25 g

Cyanuric Acid 2 Reagent Powder Pillows

246066 50

Cyclohexanediaminetetraacetic Acid

See *CDTA*

Cyclohexanediaminetetraacetic Acid, Disodium Magnesium Salt

See *CDTA Disodium Magnesium Salt*

Cyclohexanone

CAS No. 108-94-1
 For zinc test $C_6H_{10}O$, FW = 98.15
1403332 100 mL
 Assay: 99.5%

D

Dechlorinating Reagent Powder Pillows

For dechlorinating water samples
1436369 100

Dechlorinating Solution

Sodium Thiosulfate 0.1N, 1 drop/25-mL sample
32332 100 mL MDB
32353 1 L

DEHA Reagent Set

Colorimetric Method
 Iron Reduction Method for Oxygen Scavengers,
 3-450 µg/L
2446600 100 tests

DEHA 1 Reagent Powder Pillows

2167969 100

DEHA 2 Reagent Solution

2168042 100 mL

Deionized Water

See *Water, Deionized*

Deminerizer Resin

See *Resin, Demineralizer*

Desiccating (Drying) Agents

See *Drierite; Silica Gel*

Detergents Reagent

For test kit
105932 100 mL MDB

Detergents Reagent Powder Pillows

For colorimeters and spectrophotometers
100868 25

Detergents Reagent Sets

(See Parameters Section page 156 for details.)

Crystal Violet Method
 0.002-0.275 mg/L LAS
2446800 100 tests (No Air Shipments)
 Air Freight configuration
2446801 100 tests

Detergent Standard Solution as LAS

60 mg/L, 10-mL Voluette Ampule
1427110 16

Diaminobenzidine, Tetrahydrochloride

Analytical Grade, CAS No. 7411-49-6
 $C_{12}H_{14}N_4 \cdot 4HCl$, FW = 360.14
706222 5 g
 Suitability as selenium indicator: Passes test
 Selenium blank: ≤0.0025%

N,N-Diethyl-p-Phenylenediamine, Oxalate

See *DPD Oxalate*

Digestion Reagent for Kjeldahl

APHA, Nitrogen (Kjeldahl)
2340453 1 L

Digestion Reagent for Kjeldahl

With copper catalyst per Standard Methods,
 19th ed.
2742453 1 L

Digital Titrator Cartridges

For empty cartridge, see Cartridge Assembly on
 pages 90-92.)

Dilution Water, Organic Free

2641549 500 mL

Dilution Water, Sterile

See *Microbiological Products*, page 233.

Diphenylamine Sulfonic Acid Indicator Solution

2296323 25 mL SCDB

Diphenylcarbazone Reagent

For chloride mercuric nitrate method
 Powder
83514 113 g
 Powder pillows for 10-mL sample
96799 100
 Powder pillows for 100-mL sample
83699 100

Dissolved Oxygen Reagent Sets

Buret Titration Method
 Winkler Method (Azide Modification)
 1- ≥10 mg/L as DO
 300-mL sample
2351400 100 tests

Digital Titrator Method
 Winkler Method (Azide Modification)
 1- ≥10 mg/L as DO
 300-mL sample
2272200 50 tests

Drop Count Titration Method
 For OX-2P Test Kit (Prod. No. 146900)
2439802 100 tests

Dissolved Oxygen Reagent AccuVac® Ampules

Low Range (6-800 µg/L); 1-inch cell path
2501025 25
 Mid and High Range (0.3-15.0 and 1-40 mg/L)
 for natural waters
2515025 25

Dissolved Oxygen 1 Reagent Powder Pillows

60-mL sample
98199 100

Dissolved Oxygen 2 Reagent Powder Pillows

60-mL sample
98299 100

Dissolved Oxygen 3 Reagent Powder Pillows

60-mL sample
98768 25
98799 100

Dissolved Oxygen Standard Solution

Equivalent to 10 mg/L as DO; APHA (for Winkler
 titrations only)
 0.00125 N KIO_3
40149† 500 mL

DithiVer® Metals Reagent Powder Pillows

1261699 100

Dithizone

See *DithiVer Metals Reagent*.

DPD Oxalate

(N,N-Diethyl-p-Phenylenediamine Oxalate)
 Analytical Grade, CAS No. 62637-92-7
608424 25 g
 Assay: 65-95%

See *Chlorine for additional DPD reagents*.

DPD Reagent Indicator Solution

APHA, Chlorine (DPD Titration Method)
2335649† 500 mL

†Chemical Stability—See page 201.

Drierite

Desiccating agent, 8 mesh Without indicator
2285901 454 g
 With indicator
2088701 454 g

E

EC Medium, Dehydrated

1410326 100 g

EC w/MUG, Dehydrated

2310126 100 g

ECR Masking Reagent

Eriochrome Cyanine R Method for Aluminum
2380123 25 mL SCDB

ECR Reagent Powder Pillows

Eriochrome Cyanine R Method for Aluminum
 10 mL sample
2603849 100
 25 mL sample
2380268 25

ECR Reagent Solution

for Aluminum in Brine
2310629 200 mL

EDTA (TitraVer) Cartridges for Digital Titrator

2081701 0.0716 M
 Digits x 0.1 = mg/L Fe in 50 mL
 Digits x 8.95×10^{-5} = mmole Fe
1496001 0.1428 M
 Digits x 0.1785 = mg/L CaCO₃ in 100 mL
 Digits x 0.01 = German degrees hardness (Gdh)
1495901 0.714 M
 Digits = 1.785 mg/L CaCO₃ in 50 mL
 Digits x 0.1 = Gdh
2081801 0.716 M
 Digits = mg/L Fe in 50 mL
 Digits x 8.95×10^{-4} = mmole Fe
1436401 0.0800 M
 Digits x 0.1 = mg/L CaCO₃ in 100 mL
1439901 0.800 M
 Digits = mg/L CaCO₃ in 100 mL

EDTA Solution, 1 M

For colorimetric Ca, Mg
2241926 50 mL

EDTA, Disodium Salt (TitraVer)

Ethylenediaminetetraacetic Acid, Disodium Salt
 ACS Grade, CAS No. 60-00-4
 FW = 292.25
20426 100 g
20434 500 g

EDTA Powder Pillows

For Cobalt, Nickel, Phenols
700599 100

EDTA Standard Solutions (TitraVer)

0.020 N (0.010 M) (N/50)
20529 200 mL
20553 1 L
20556 4 L
 0.035 N
2349932 100 mL MDB
 0.20 N (0.10 M)
102149 500 mL

EDTA, Tetrasodium Salt

(Ethylenediaminetetraacetic Acid, Tetrasodium Salt Dihydrate)
 Analytical Grade, CAS No. 64-02-8
 $C_2H_4N_2(CH_2COO)_4Na_4 \cdot 2H_2O$, FW = 416.23
700534 500 g
 Assay: $100.0 \pm 2.0\%$
 Insoluble matter: $\leq 0.02\%$

EGTA Solution

For colorimetric calcium and magnesium determination
2229726 50 mL SCDB

Eriochrome Black T

[1-(1-Hydroxy-2-naphthylazo)-6-nitro-2-naphthol-4-sulfonic acid, sodium salt]
 Practical Grade, CAS No. 1787-61-7
 Color change: pH 5.0 (red)-pH 6.5 (blue)
 $C_{20}H_{12}O_7N_3SNa$, FW = 461.40
13224 25 g
 Suitability for use as calcium and magnesium indicator: Passes test

Ethylene Glycol

CAS No. 107-21-1 FW = 62.07
203953 1 L
 IR spectrum: Passes test

Ethylene Glycol Reagents

See *Glycol*.

Ethylene Glycol Solution

0.05%
 Used in Hach Glycol Test
2183936 15 mL SCDB

Ethylenediaminetetraacetic Acid, Salts

See *EDTA and TitraVer Hardness Reagent*

F

m-FC Broth, Dehydrated

(See Microbiological Products, pages 229-237 for prepared media.)
1462434 500 g
1462426 100 g

Ferric Chloride Reagent

For glutaraldehyde test
 5-mL Voluette Ampule
2171820 20

Ferric Chloride Solution

APHA, BOD
42953 1 L

Ferric Chloride-Sulfuric Acid Solution

For volatile acids
204253† 1 L

Ferric Ion Solution

For colorimetric chloride determination
2212242 100 mL

Ferroin Indicator Solution

APHA, High Range COD
181233 29 mL DB
 APHA, Low Range COD
2055133 25 mL DB

FerroMo™ Reagent Set

(See Parameters Section page 166 for details.)
Colorimetric method in presence of molybdenum
 FerroMo method, 0.01-1.80 mg/L Fe
 Contains: FerroMo Reagent 1 and Reagent 2
2544800 100 tests

FerroMo™ Iron Reagent 1

Powder Pillows
2543768 25

FerroMo™ Iron Reagent 2

Powder Pillows
2543866 50

Ferrous Ammonium Sulfate, Hexahydrate

ACS Grade, CAS No. 7783-85-9
 $Fe(NH_4)_2(SO_4)_2 \cdot 6H_2O$, FW = 392.14
1125614 113 g
 Assay: 98.5-101.5%

Ferrous Ammonium Sulfate Standard Solutions

0.125 N
2054849† 500 mL
 0.250 N
181133NC 29 mL DB

Ferrous Ethylenediammonium Sulfate Standard Solution

Cartridge for use with Digital Titrator
 For chlorine titration, FEAS method
2292301† 0.00564 N

Ferrous Iron Reagent

Phenanthroline Method
 AccuVac Ampules
2514025 25
 Powder Pillows for 25-mL sample
103769 100

Ferrous Sulfate, Heptahydrate

ACS Grade, CAS No. 7782-63-0
 $FeSO_4 \cdot 7H_2O$, FW = 278.02
706834 500 g
 Assay: $\geq 99.0\%$

FerroVer® Iron Reagent

For iron (0-2.0 mg/L Fe)
 AccuVac Ampules
2507025 25
 Powder
30314 113 g
 Powder Pillows 5-mL sample
92746 50
92799 100
92728 1000-pac
 10-mL sample
2105769 100
2105728 1000-pac
 25-mL sample
85499 100
85428 1000-pac

FerroZine® Iron Reagent**

[3-(2-Pyridyl)-5,6-bis(4-phenylsulfonic acid)-1,2,4-triazine, monosodium salt, monohydrate]
 CAS No. 69898-45-9
 One of the most sensitive iron reagents known
 $N_4C_{20}O_{13}S_2O_6Na \cdot H_2O$, FW = 510.47
230424 25 g

Assay: $>95\%$
 Acidity: 1.0 ± 0.5 moles H+ as FerroZine
 Fe: ≤ 5 ppm Clarity of solution: Passes test
 **Manufactured under one or more of the following patent numbers: 3,709,662; 3,770,735; 3,836,331

FerroZine® Iron Reagent Solutions

For laboratory determination of iron
230149 500 mL
 Pillows for 25-mL sample
230166 50

Filtration Aid Solutions

104633 29 mL DB

†Chemical Stability—See page 201.

Fluorescein, Disodium Salt

Practical Grade, CAS No. 518-47-8
Suitable for dye tracing
 $C_{20}H_{10}O_5Na_2$, FW = 376.28
105101 500 g
Solubility: Passes test
Fluorescence: Passes test

Fluoride Ionic Strength Adjustor

Powder
258901 454 g
Powder Pillows
258999 100
Solution
2829017 3.78 L

Fluoride Reagent

See SPADNS Reagent

Fluoride Reagent (SPADNS)

AccuVac® Ampules
2506025 25

Fluoride Reagent (SPADNS2)

Arsenic-Free AccuVac Ampules
2527025 25

Fluoride Reference Electrolyte Solution Cartridge

Not for use with 48000 or 50000 series electrodes
2195001
(See Potassium Chloride Reference Electrolyte cartridges.)

Fluoride Standard Solutions as F⁻ (NIST)

0.2 mg/L
40502 500 mL
0.5 mg/L
40505 500 mL
0.8 mg/L
40508 500 mL
1.0 mg/L
29149 500 mL
29153 1 L
1.2 mg/L
40512 500 mL
1.5 mg/L
40515 500 mL
2.0 mg/L
40520 500 mL
5.0 mg/L
2797149 500 mL
10 mg/L
35949 500 mL
100 mg/L
23249 500 mL

Also see Mixed Parameter Quality Control Standards on page 205.

Formaldehyde, Solution

ACS Grade, CAS No. 50-00-0
 CH_2O , 36-38%, FW = 30.03
205932 100 mL MDB
Assay: ≥ 36.5 but $\leq 38.0\%$

Formaldehyde Developing Solution

For low-range test
2257249 500 mL

Formaldehyde Reagent Set

(See Parameters Section page 154 for details.)
MBTH method, 3-500 $\mu\text{g/L}$
2257700 100 tests

Formaldehyde 1 Reagent

Powder Pillows
For high-range formaldehyde determination
2182999 100

Formaldehyde Standard Solution (NIST)

4000 mg/L, 10-mL Voullette Ampule
2257310 16

Formate Reagent Solution

Total Iodine in Brine Method
2329032 100 mL

Formazin Stock Solution

4000 NTU, APHA, for turbidity standardization
246142 100 mL
246149 500 mL

Formula 2533™

See Nitrification Inhibitor.

Formula 2589™

See Fluoride Ionic Strength Adjustor.

Free Ammonia Reagent Solution

2877336 4 mL SCDB

Also see Ammonia, Free.

Free Copper Reagent Powder Pillows

For free copper using CU-6 test kit
2182369 100

G

Gallic Acid Solution

For conductivity testing; used to neutralize hydroxide ion interference
1442326 50 mL SCDB

DL-Glutamic Acid, Monohydrate

$C_5H_9NO_4 \cdot H_2O$, FW = 165.15
CAS No. 56-86-0
2340923 10 g
Assay: 99%

Glucose-Glutamic Acid Standards for BOD

For Manometric Method
300 mg/L each (Glucose plus Glutamic Acid)
10 mL ampules
1486510 16
For Dilution Method
3000 mg/L each (Glucose plus Glutamic Acid)
10 mL ampules
1486610 16
ezGGA 450 mg/L each (Glucose plus Glutamic Acid)
2 mL ampules
2514420 20

Glycerin (Glycerol)

CAS No. 56-81-5
 $C_3H_8O_3$, FW = 92.10
243134 500 g

Glycine Reagent

For Chlorine Dioxide DPD Method
2762133 29 mL SCDB
For manganese interference removal in Indigo Method for ozone
2344042 100 mL

Glycine p-Toluenesulfonic Acid

(Glycine PTSA)
Protein-TKN standard: 5.665% N,
35.40% crude protein
2278024 25 g

Glycol Reagent 1 Powder Pillows

Used in Hach Glycol Test
2183668 25

Glycol Reagent 2 Powder Pillows

Used in Hach Glycol Test
2183768 25

Glycol Reagent 3 Vials

Used in Hach Glycol Test
2183825 25

H

Hardness 1 Solution

pH 10.1 \pm 0.1 at 20°C
42426 50 mL SCDB
42432 100 mL MDB
42449 500 mL
42453 1 L

Hardness 2 Solution

Calmagite indicator solution for hardness
42532 100 mL MDB
42549 500 mL

Hardness 3 Solution

EDTA Titrant solution for hardness, 0.03 N (0.015 M)
42612 50 mL DB
42632 100 mL MDB
42649 500 mL
42653 1 L

Hardness, Rapid Liquid™ Reagents

For rapid liquid ultra-low range hardness,
8-1000 $\mu\text{g/L}$ as $CaCO_3$
Chlorophosphonazo Indicator Solution
2589549 500 mL
CDTA Reagent
2589636 10 mL

Hardness (Calcium) Reagent Sets

(See Parameters Section—Calcium and Hardness pages 141 and 161-163 for details and German Degree Hardness reagents.)

Colorimetric Methods

Calmagite Method for Water Analysis,
0.05-4.00 mg/L Calcium as $CaCO_3$;
0.05-4.00 mg/L Magnesium as $CaCO_3$
2319900 50 tests

Buret Titration Method

CalVer® 2 Indicator/EDTA Method
Range: 0-5,000 mg/L as $CaCO_3$
(0.020 N titrant)
2447000 100 tests

Digital Titrator Method

CalVer® 2 Indicator/EDTA Method
Range: 10-160 mg/L as $CaCO_3$
(0.0800 M titrant)
2447200 100 tests
Range: 100-4,000 mg/L as $CaCO_3$
(0.800 M titrant)
2447500 100 tests

Hardness (Calcium and Total, Sequential) Reagent Sets

(See Parameters Section pages 161-163 for details.)

Digital Titrator Method

EDTA Titration Method
Range: 10-160 mg/L as $CaCO_3$
(0.0800 M titrant)
2448600 100 tests
Range: 100-4000 mg/L as $CaCO_3$
(0.800 M titrant)
2448700 100 tests
Range: 10-4000 mg/L as $CaCO_3$
(without Sulfuric Acid; 0.0800 M and 0.800 M titrants)
2272100 100 tests

Hardness (Total) Reagent Sets

(See Parameters Section—Hardness pages 161-163 for details.)

Buret Titration Method

ManVer® 2 Indicator/EDTA Method

Range: 0-2,500 mg/L as CaCO₃
(0.0200 N titrant)

2447600 100 tests

Range: 100-25,000 mg/L as CaCO₃
(0.200 N titrant)

2447700 100 tests

Digital Titrator Method

ManVer® 2 Indicator/EDTA Method

Range: 10-160 mg/L as CaCO₃
(0.800 M titrant)

2448000 100 tests

Range: 100-4,000 mg/L as CaCO₃
(0.800 M titrant)

2448100 100 tests

Range: 10-4,000 mg/L as CaCO₃
(0.0800 M and 0.800 M titrants)

2272000 100 tests

Drop Count Titration Method

Hardness Indicator/EDTA, 0-20 mg/L as CaCO₃

2437800 100 tests

UniVer® 3 Indicator/EDTA

Range: 0-30 gpg as CaCO₃
(Hardness 3 Titrant)

2437900 100 tests

Range: 0-400 mg/L as CaCO₃
(0.035 N titrant)

2437901 100 tests

Hardness (Total) Ultra Low Range Reagent Sets

Colorimetric Method

Chlorophosphonazo Method, 8-1000 µg/L as CaCO₃ with indicator solution pillows

2603100 100 tests

Same as above, with bottled Chlorophosphonazo Indicator Solution.

2603101 250 tests

Hardness Standard Solutions as CaCO₃ (NIST)

0.50 mg/L hardness

2058016 946 mL

2.0 mg/L hardness

2058116 946 mL

20 gpg (342 mg/L) hardness plus 2 mg/L iron as Fe (Hardwater)

47949 500 mL

10,000 mg/L hardness, 10-mL Voluette Ampule

218710 16

Also see Mixed Parameter Quality Control Standards on page 205.

Hardwater, 20 gpg

20 gpg (342 mg/L) as CaCO₃ and 2 mg/L Iron

47949 500 mL

Hexadecane

Standard for Oil & Grease test

99% CAS No. 544-76-3

FW = 226.44

2664842 100 mL

Hexamethylenetetramine

(Methenamine)

Analytical Grade, CAS No. 100-97-0

Suitable for preparation of formazin standards (CH₂)₆N₄, FW = 140.19

187834 500 g

Hexamethylenetetramine

Powder Pillows

For Aluminum ECR method

10 mL sample

2603999 100

25 mL sample

187866 50

Hexanes

ACS Grade, CAS No. 110-54-3

Primarily C₆H₁₄, FW = 86.18

1447849 500 mL

Hexanes (95% n-hexane)

Organic Residue Analysis, CAS No. 110-54-3

FW = 86.18

2510253 1 L

HexaVer® Powder Pillows

CDTA - for complexing interferences

24399 100

HexaVer® Hardness Titrant

See CDTA Titrant.

HNB Dilution Solvent

Used with HNB powder for the determination of calcium and magnesium in brine

2305042 100 mL

HNB Lab Reagent Package

Each package contains one unit of HNB powder and one unit of HNB dilution solvent. Used for the determination of calcium and magnesium in brine

2307300 each

Holmium Trichloride Powder Pillows

For spectrophotometer wavelength checks

2343267 20

Hydrazine Reagent, HydraVer® 2

179032 100 mL MDB

179049 500 mL

179053 1 L

Hydrazine AccuVac® Ampules

2524025 25

Hydrazine Sulfate

ACS Grade, CAS No. 10034-93-2

Suitable for preparation of formazin standards

H₂NNH₂•H₂SO₄, FW = 130.12

74226 100 g

Assay: ≥99.0%

Hydrochloric Acid (12 N)

ACS Grade, CAS No. 7647-01-0

HCl, approx. 37%, FW = 36.45

13449 500 mL

13406 2.5 L

Assay: ≥36.5 but ≤38.0%

Hydrochloric Acid Solutions

For soil analysis

Weak HCl solution 0.75 N

1226729 200 mL

Strong HCl solution 4.0 N

1227429 200 mL

Hydrochloric Acid Standard Solutions

0.02 N

2330353 1 L

0.1 N

1481253 1 L

1.0 N, 1.0 M

2321353 1 L

2.5 N

141832 100 mL MDB

6.0 N (1:1)

88449 500 mL

Hydrochloric Acid Standard Solution

Cartridge for Digital Titrator

1439001 8.00 N

Digits x 0.1 = meq

Hydrogen Peroxide Solution, 30%

ACS Grade, CAS No. 7722-84-1

H₂O₂, FW = 34.01

14411 473 mL (No Air Shipments)

Assay: ≥29.0 but ≤32.0%

Hydrogen Peroxide Solution, 50%

Suitable for use with Hach Digesdahl® Digestion

Apparatus

2119649 490 mL

(No Air/UPS Shipments)

Hydrogen Sulfide Paper

2537733 100

Hydrogen Sulfide Reagent Set

Colorimetric Method

Methylene Blue Method, 5-800 µg/L S²⁻

(Color disc 0-2.25 mg/L) as S²⁻

Contains: Sulfide Reagents 1 and 2.

For turbid samples, also order Pretreatment

Reagent Set 2438700.

2244500 100 tests

Hydrosulfite Reagent Powder Pillows

For reduction of chelated copper to Cu⁺

25-mL sample

2118869 100

Hydroxylamine Hydrochloride

ACS Grade, CAS No. 5470-11-1

NH₂OH•HCl, FW = 69.49

24614 113 g

Assay: ≥96.0%

Hydroxylamine-Hydrochloride Solution, 100 g/L

For volatile acids

81842 100 mL

Hydroxy Naphthol Blue

ACS Grade, CAS No. 63451-35-4

For use in calcium titrations

Also see CalVer® 2 Calcium Indicator.

28114H 113 g

28101H 454 g

1-(1-Hydroxy-2-Naphthylazo)-6-Nitro-2-Naphthol-4-Sulfonic Acid, Sodium Salt

See Eriochrome Black T

Hypochlorite (Chlorine Bleach) Reagent Set

(See Parameters Section page 165 for details.)

For Digital Titrator, 5-15% Cl₂

2687000 100 tests

Indoxyl beta-D-glucopyranoside

Blue color indicator for *Enterococci*

2813935 2 g

Store in freezer (less than 0°C)

Iodate Standard Solution

See Dissolved Oxygen (DO) Standard Solution.

Iodate-Iodide Standard Solutions

Cartridge for Digital Titration

1496101† 0.3998 N

Digits = mg/L SO₃ in 20 mL

Digits x 0.0005 = meq

†Chemical Stability—See page 201.

Iodide-Iodate — Manganese

Iodide-Iodate Solutions

(See Potassium Iodide-Iodate and Iodate-Iodide Standard Solutions)

Iodine Standard Solution Cartridge for Digital Titrator

2333301† 0.0282 N

Iodine Reagent

See *DPD Reagents for Chlorine*.

Iodine Standard Solutions

0.0282 N
2333353† 1 L
0.1 N (0.1 M)
2321453† 1 L

Iron Reagents

See FerroMo™, Ferrous Iron Reagents, FerroVer®, FerroZine®, TPTZ Reagents (See Parameters Section for details on several methods.)

Iron Standard Solutions as Fe (NIST)

1 mg/L
13949 500 mL
10 mg/L
14049 500 mL
25 mg/L, 10-mL Voluette Ampule
1425310 16
50 mg/L, 10-mL Voluette Ampule
1425410 16
100 mg/L
1417542 100 mL
1000 mg/L (HCl matrix)
227142 100 mL

Also see **Mixed Parameter Quality Control Standards on page 205.**

Iron TNTplus™

0.2-6.0 mg/L
TNT858 25 tests

Iron (Total) Reagent Sets

Digital Titrator Method
EDTA Titration Method
Range: 10-100 mg/L as Fe
(0.0716 M titrant)
2449200 100 tests
Range: 100-1000 mg/L as Fe
(0.716 M titrant)
2449300 100 tests

Isopropyl Alcohol

ACS Grade, CAS No. 67-63-0 Assay: ≥99.9%
CH₃CHOHCH₃, FW = 60.10
1445949 500 mL
1445917 4 L
Technical Grade.
1227642 100 mL

Lauryl Tryptose Broth, Dehydrated

19726 100 g
19734 500 g
(See Microbiological Products, pages 229-237 for prepared media.)

Lauryl Tryptose w/MUG Broth, Dehydrated

2255734 500 g

Lead, PPb-1 Acid Preservative Solution

For LeadTrak® Lead Test
2368531 236 mL

Lead Acetate Solution, 10%

APHA, Arsenic and Selenium
1458042 100 mL

Lead Reagent Sets

(See Parameters Section page 168 for details.)

Colorimetric Method
Dithizone Method, 3-300 µg/L Pb
(Range depends on instruments used)
2243100 100 tests (No Air Shipments)
Air Freight Configuration
2243101 100 tests
LeadTrak® Fast Column Extraction Method,
5-150 µg/L Pb
2375000 20 tests
PAR Method, 0.1-2.0 mg/L Pb, TNTplus
TNT850 25 tests

Lead Sensor Pack

For HSA-1000 Analyzer
5040100 10 tests

Lead Standard Solutions as Pb (NIST)

10 mg/L
2374820 25 mL
100 mg/L
1261742 100 mL
1000 mg/L (HNO₃ matrix)
1279642 100 mL

Lead TNTplus™

PAR method, 0.1-2.0 mg/L Pb
TNT850 25 tests

Lights Solution Ampules

For checking ORP electrode response
2612520 20

Lignin Reagent

See *Tannin-Lignin Reagent Set*; also TanniVer® 3
Tannin-Lignin Reagent.

Lithium Hydroxide Powder Pillows

For manometric BOD apparatus; for potassium test
in acid digest
1416369 100

m-HPC Agar, Dehydrated

2280734 500 g

m-TEC Agar, Dehydrated

A differential and selective MF medium for *E. coli*.
2281126 100 g
(See Microbiological Products, pages 229-237 for prepared media.)

m-TGE Broth, Dehydrated

2426400 500 g

Magenta-GlcA

(5-bromo-6-chloro-3-indoyl-beta-D-glucuronide)
Red color indicator for *E. coli*
2815035 2 g
Store in freezer (less than 0°C)

Magnesium, reagents for determination of

See *Hardness Reagent Sets*.

Magnesium Chloride

ACS Grade, CAS No. 7791-18-6
MgCl₂•6H₂O, FW = 203.33
611434 500 g
Assay: 99.0-102%

Magnesium Chloride Cartridge for Digital Titrator

For chelants determination
2062501 0.080 M
Digits x 0.1 = mg/L Chelant as mg/L
CaCO₃ in 100-mL sample

Magnesium Chloride Pillows for Dilution Water Preparation

See *Microbiological Products, page 237*.

Magnesium Chloride Solution, 51% w/v

APHA, Cyanide Distillation
1476253 1 L

Magnesium EDTA

See *EDTA, Magnesium Disodium Salt*.

Magnesium Standard Solutions (NIST)

1000 mg/L as Mg (HNO₃ matrix)
1479442 100 mL
For checking Hardness Monitor response
10,000 ± 1000 mg/L as CaCO₃
102233 29 mL DB

Magnesium Sulfate Solution

APHA, BOD
43049 500 mL

Manganese Reagent Sets

(See Parameters Section page 169 for details.)

Colorimetric Method
PAN Method, 0.006-0.700 mg/L as Mn
For 10-mL samples
2651700 50 tests
For 25-mL samples
2243300 100 tests
Periodate Oxidation Method, 0.1-20.0 mg/L Mn
(Color disc 0-3 mg/L) as Mn
Contains: Buffer Powder Pillows (Citrate type),
Sodium Periodate Powder Pillows
For 10-mL samples
2430000 100 tests
For 25-mL samples
2243200 100 tests

K, L

KHP

See *Potassium Acid Phthalate*.

Kjeldahl Indicator

See *TKN Indicator Solution*.

Lactose Broth, Dehydrated

19634 500 g
(See Microbiological Products, pages 225-229 for prepared media.)

†*Chemical Stability—See page 201.*

M

m-E Agar, Dehydrated

2281226 100 g
2281234 500 g

m-Endo Agar LES, Dehydrated

2406634 500 g

m-Endo Broth, Dehydrated

1462326 100 g
1462300 500 g

m-Green YM Broth, Dehydrated

2428200 500 g



Manganese Standard Solutions as Mn (NIST)

10 mg/L, 2-mL PourRite Ampule	
2605820	20
25 mg/L, 2-mL PourRite Ampule	
2112820	20
250 mg/L, 10-mL Voluette Ampule	
1425810	16
1000 mg/L (HNO ₃ matrix)	
1279142	100 mL

Also see Mixed Parameter Quality Control Standards on page 205.

Manganous Sulfate Powder Pillows

For dissolved oxygen; 300-mL sample

107166	50
---------------	----

Manganous Sulfate Solution

APHA, Dissolved Oxygen Method

27549	500 mL
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Mannitol

ACS Grade, CAS No. 69-65-8

C₆H₁₄O₆, FW = 182.17

2288226	100 g
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ManVer[®] 2 Hardness Indicator Solution

APHA, Hardness Method

42526	50 mL SCDB
42532	100 mL MDB
42549	500 mL

ManVer[®] 2 Hardness Indicator Powder

APHA, Hardness Method

28014	113 g
Powder pillows for test kits	
92899	100
Powder pillows for 50 mL sample	
85199	100

Masking Reagent for Aluminum in Brine

2310542	100 mL
----------------	--------

MBTH Powder Pillows

For formaldehyde determination

2257169	100
----------------	-----

Mercuric Nitrate Cartridges for Digital Titrator

1439301†	0.2256 N
Digits = mg/L Cl ⁻ in 100 mL	
92101	2.256 N
Digits x 0.000282 = meq	
2393701	2.570 N
Digits x 0.1 = ppt salinity in 2 mL	
Digits x 0.00321 = meq	

Mercuric Nitrate Standard Solutions

0.0141 N	
28553	1 L
0.141 N	
192049	500 mL

Mercuric Sulfate

Analytical Grade, CAS No. 7783-35-9

Suitable for use as COD reagent

HgSO₄, FW = 296.68

191520	28.3 g
---------------	--------

Assay: 100 ± 2%

Mercuric Thiocyanate Solution

For colorimetric chloride determination

2212129	200 mL
----------------	--------

Mercury Reagent Sets

(See Parameters Section page 170 for details.)

Colorimetric Method

Cold Vapor Method, 0.1-2.5 µg/L

2658300	25 tests
----------------	----------

Mercury Standard Solutions as Hg (NIST)

1000 mg/L (HNO₃ matrix)

1419542	100 mL
----------------	--------

Metals Prep Set

For determination of total metals with TNTplus reagents

TNT890	25 tests
---------------	----------

Methyl Alcohol

ACS Grade, CAS No. 67-56-1

CH₃OH, FW = 32.04

1446449	500 mL
----------------	--------

1446417	4 L (No Air Shipments)
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Methyl Orange Indicator Solutions

0.50 g/L, APHA

14849	500 mL
--------------	--------

14832	100 mL MDB
--------------	------------

Methyl Purple Indicator Solution

1.0 g/L. For alkalinity titrations;

pH range 4.8 to 5.4

2193432†	100 mL MDB
-----------------	------------

2193449†	500 mL
-----------------	--------

Methyl Red Indicator Solution

1.0 g/L, APHA

14949	500 mL
--------------	--------

Methylthymol Blue Powder Pillows

Indicator for metals and chelant titrations

2284799	100
----------------	-----

4-Methylumbelliferyl-fl-D-Glucuronide

(MUG Fluorescence Crystals) CAS No. 6160-80-1

For rapid detection of *E. coli*

2184421	1 g
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Mineral Stabilizer Solution

Removal of hardness interference in ammonia method for soils, sludges and wastewater

2376626	50 mL SCDB
----------------	------------

2376649	500 mL
----------------	--------

Molybdate Reagent

For high range (0.2-30.0 mg/L) phosphate

223632	100 mL MDB
---------------	------------

223653	1 L
---------------	-----

223617	3.78 L
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For low range phosphate

2599849	500 mL
----------------	--------

Molybdate 3 Reagent

For low range silica

199526	50 mL SCDB
---------------	------------

199532	100 mL MDB
---------------	------------

199549	500 mL
---------------	--------

199553	1 L
---------------	-----

Molybdate Reagent Powder Pillows

For high range silica (1-100 mg/L) silica 10-mL sample

2107369	100
----------------	-----

2107328	1000
----------------	------

25-mL sample

104199	100
---------------	-----

104128	1000
---------------	------

Molybdate Reagent Powder Pillows

For low range (0-2 mg/L) silica 5-mL sample

1454699	100
----------------	-----

Molybdenum 1 Reagent Powder Pillows

For 5-mL sample

2359299	100
----------------	-----

For 20-mL sample

2352449	100
----------------	-----

For 50-mL sample

2352769	100
----------------	-----

Molybdenum 2 Reagent Solution

2352523	25 mL SCDB
----------------	------------

2352512	50 mL MDB
----------------	-----------

2352532	100 mL MDB
----------------	------------

2352549	500 mL
----------------	--------

Molybdenum (Molybdate) Reagent Sets

(See Parameters Section page 171 for details.)

Colorimetric Method

Mercaptoacetic Acid Method, 0.3-40.0 mg/L as Mo⁶⁺

10-mL sample

2604100	100 tests
----------------	-----------

25-mL sample

2243400	100 tests
----------------	-----------

MolyVer[®] 6 AccuVac Ampules Reagent Set

2522098	25 tests
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Ternary Complex Method

0.02-3.00 mg/L as Mo⁶⁺

Contains: Molybdenum 1 and 2 Reagents for Low Range Molybdate

5-mL sample

2439500	100 tests
----------------	-----------

20-mL sample

2449400	100 tests
----------------	-----------

50-mL sample

2440200	100 tests
----------------	-----------

Molybdenum Standard Solutions as Mo (NIST)

10 mg/L

1418742	100 mL
----------------	--------

1000 mg/L [NH₄OH(Cl⁻,NO₃⁻) matrix]

1418642	100 mL
----------------	--------

Molybdovanadate Reagent

For Reactive (ortho) Phosphate

2076032	100 mL MDB
----------------	------------

2076049	500 mL
----------------	--------

2076053	1 L
----------------	-----

2076004	1 L, 4/pk
----------------	-----------

2076017	3.78 L
----------------	--------

AccuVac Ampules

2525025	25
----------------	----

MolyVer Reagent AccuVac Ampules

Mercaptoacetic Acid Method, 0.2-40.0 mg/L Mo⁶⁺

2522025	25
----------------	----

MolyVer 1 Molybdenum Reagent Powder Pillows

10 mL sample 0.3-40.0 mg/L Mo

2604299	100
----------------	-----

25-mL sample 0.35-0 mg/L Mo

1414669	100
----------------	-----

MolyVer 2 Molybdenum Reagent Powder Pillows

10-mL sample 0.3-40.0 mg/L Mo

2604399	100
----------------	-----

25-mL sample 0-35.0 mg/L Mo

1414869	100
----------------	-----

†Chemical Stability—See page 201.

Molybdenum — Nitrogen-Ammonia

MolyVer 3 Molybdenum Reagent Powder Pillows

10-mL sample 0.3-40.0 mg/L Mo
2604499 100
25-mL sample 0-35.0 mg/L Mo
1417869 100

Monochlor F Reagent PP

2802246 50
2802299 100

Monochloramine Reagent Set, HR

Indophenol method, Test 'N Tube
0.1-10.0 mg/L as Cl₂
2805145 25-50 tests

Also see Spec[✓] Gel Secondary Standards for Monochloramine on page 205.

MUG Reagent

See 4-Methylumbelliferyl-fl-D-Glucuronide.

MUGGAL

(4-Methylumbelliferyl beta-D galactopyranoside)
Fluorescent indicator for total coliforms
2814135 2 g
Store in freezer (less than 0°C)

Murexide Indicator Powder Pillows

2701349 100

N

N-(1-Naphthyl)-ethylenediamine Dihydrochloride

Analytical Grade, CAS No. 1465-25-4
C₁₂H₁₄N₂•2HCl, FW = 259.17
1124224 25 g
Assay: ≥98.0%

Nalidixic Acid

2407124 25 g

Natural Water Standard Solutions (NIST)

For conductivity/TDS
40% sodium sulfate, 40% sodium bicarbonate,
20% sodium chloride
30 mg/L TDS, 46.7 µS/cm
2974526 50 mL
2974549 500 mL
300 mg/L TDS, 445 µS/cm
2974626 50 mL
2974649 500 mL
1000 mg/L TDS, 1417 µS/cm
2974726 50 mL
2974749 500 mL
3000 mg/L TDS, 3960 µS/cm
2974826 50 mL
2974849 500 mL

Neodymium Chloride Solution

Wavelength calibration standard for spectrophotometers
1421042 100 mL

Nessler Reagent

2119432 100 tests MDB
2119449 500 mL
2119453 1000 mL

Neutral Detergent Concentrate

Acid Detergent Fiber Test
2277353 1 L

Nickel 1 Reagent Powder Pillows

212368 25

Nickel 2 Reagent Powder Pillows

212468 25

Nickel Reagent Sets

(See Parameters Section page 172 for details.)

Colorimetric Method

Heptoxime Method, 0.02-1.80 mg/L as Ni

2243500 50 tests

PAN Method, 0.006-1.000 mg/L as Ni

10-mL sample

2651600 100 tests

25-mL sample

2242600 100 tests

Dimethylglyoxime Method, 0.1-6.0 mg/L Ni

TNTplus

TNT856 25 tests

Nickel Standard Solutions as Ni (NIST)

1000 mg/L (HNO₃ matrix)

1417642 100 mL

Nickel TNTplus™

Dimethylglyoxime Method, 0.1-6.0 mg/L Ni

TNT856 25 tests

Nicotinic Acid p-Toluenesulfonic Acid

(Nicotinic Acid PTSA)

Protein-TKN standard: 4.743% N, 29.64% crude protein

2278124 25 g

Nitrate Ionic Strength Adjustor Powder Pillows

4456369 100

Nitrate Ionic Strength Adjustor Buffer Solution

2488349 500 mL

Nitrate Pretreatment Reagent Set

To correct for the presence of nitrite.

Contains Phenol Solution and Bromine water.

2438700

Nitrate Reagents

See Nitrogen, Nitrate Reagents and NitriVer Reagents.

Nitrate Standard Solution

See Nitrogen, Nitrate Standard Solutions.

NitriVer® 5 Nitrate Reagent

For mid- and high range: (0.1-10.0 or 0.3-30.0 mg/L as nitrate-N)

AccuVac Ampules

2511025 25

Powder Pillows 5-mL sample

1403546 50

1403599 100

10-mL sample

2106169 100

2106103 300

25-mL sample

1403499 100

1403428 1000

NitriVer® 6 Nitrate Reagent

Powder Pillows

For low range: 0.01-0.50 mg/L as nitrate-N.

Use with NitriVer 3

5-mL sample (saltwater)

2076199 100

5-mL sample

1412099 100

10-mL sample

2107249 100

30-mL sample

1411999 100

1411928 1000-pac

Nitric Acid

ACS Grade, CAS No. 7697-37-2

HNO₃ approx. 70%, FW = 63.01

15249 500 mL (No FedEx Shipments)

Nitric Acid Solution, 1:1

254049 500 mL

Nitrification Inhibitor, Formula 2533™

Contains 2-chloro-6 (trichloromethyl) pyridine (N-Serve), coated on an inert substrate. Two shots in a 300-mL sample (use the dispenser cap, available below) inhibits nitrogenous oxygen demand in the BOD test. Approximately 200 samples can be treated with 35 g.

253335 35 g

253334 500 g

Dispenser cap (for 253335)

45901 each

Nitrite TNTplus™

LR, Diazotization method, 0.015-0.60 mg/L NO₂-N

TNT839 25 tests

HR, Diazotization method, 0.6-6.0 mg/L NO₂-N

TNT840 25 tests

Nitrite Solution, Stock,

250 µg/mL as N

APHA, Nitrogen (Nitrite)

2340249 500 mL

NitriVer® 2 Nitrite Reagent Powder Pillows

For high range: up to 250 mg/L as nitrite.

5-mL sample

181369 100

10-mL sample

2107569 100

25-mL sample

221969 100

NitriVer® 3 Nitrite Reagent

For low range: 0.002-0.500 mg/L or 0.02-0.30 mg/L as nitrite-N.

AccuVac Ampules

2512025 25

Powder Pillows 5-mL sample

1407899 100

1407828 1000

10-mL sample

2107169 100

25-mL sample

1406599 100

1406528 1000

Nitrogen Standards

For checking accuracy of crude protein test (TKN).

Set of three 25-g standards: Ammonium p-Toluenesulfonic Acid (Ammonium PTSA), Glycine PTSA and Nicotinic Acid PTSA.

2277800 Set of 3

Nitrogen-Ammonia Reagent Sets

Also see Ammonia.

(See Parameters Section page 128 for details.)

Colorimetric Method

Nessler Method, 0.02-2.50 mg/L NH₃-N

2458200 250 tests

10-mL sample

2429900 100 tests

Colorimetric Method

10-mL sample

2668000 100 tests

Colorimetric Method

Test 'N Tube™ AmVer™ Reagent Set,

0.02-2.50 mg/L NH₃-N mg/L

2604545 50 tests

Test 'N Tube™ AmVer™ Reagent Set,

0.4-50.0 mg/L NH₃-N

2606945 50 tests

Nitrogen-Ammonia Standard Solutions as NH₃-N

1 mg/L	
189149	500 mL
10 mg/L	
15349	500 mL
50 mg/L, 2-mL PourRite Ampule	
1479120	20
50 mg/L, 10-mL Voluette Ampule	
1479110	16
100 mg/L	
2406549	500 mL
150 mg/L, 10-mL Voluette Ampule	
2128410	16
160 mg/L, 10-mL Voluette Ampule	
2109110	16
1000 mg/L	
2354153	1 L

Also see Mixed Parameter Quality Control Standards on page 205.

Nitrogen-Inorganic, Total Pretreatment Reagent Set

Test 'N Tube™ Titanium Chloride Method, 0.2-25.0 mg/L
Contains: Total Inorganic Nitrogen Reductant Ampules, and Total Inorganic Nitrogen Pretreatment Reagent (Method also requires 2604545)
2604945 50 tests

Nitrogen-Nitrate Reagent Sets

(See Parameters Section page 173 for details.)
(See NitraVer for additional Nitrate reagents.)

Colorimetric Method

High Range Cadmium Reduction Method
Range: 0-10 mg/L as NO₃-N,
5-mL sample

2460800	100 tests
Low Range Cadmium Reduction Method	
Range: 0.01-0.50 mg/L as NO ₃ -N, 10-mL sample	
2429800	100 tests
30-mL sample	
2245100	100 tests

Colorimetric Method

Chromotropic Acid Method
Test 'N Tube NitraVer X Reagent Set, 0.2-30.0 mg/L
2605345 25-50 tests

Nitrogen-Nitrate TNTplus™, LR

0.2-13.5 mg/L NO₃-N
TNT835 25 tests

Nitrogen-Nitrate TNTplus™, HR

5-35 mg/L NO₃-N
TNT836 25 tests

Nitrogen-Nitrate Standard Solutions as NO₃-N (NIST)

1 mg/L as NO ₃ -N, 4.43 mg/L as NO ₃ ⁻	
204649	500 mL
5 mg/L, 10-mL Voluette Ampule	
2557810	16
10 mg/L, 44.3 mg/L as NO ₃ ⁻	
30749	500 mL
15 mg/L	
2415132	100 mL MDB
100 mg/L as NO ₃ -N, 443 mg/L as NO ₃ ⁻	
194749	500 mL
500 mg/L, 10-mL Voluette Ampule	
1426010	16
500 mg/L, 2-mL PourRite Ampule	
1426020	20
1000 mg/L as NO ₃ -N; 4430 mg/L as NO ₃ ⁻	
1279249	500 mL

Also see Mixed Parameter Quality Control Standards on page 205.

Nitrogen-Nitrite, Low Range, Reagent Set

Colorimetric Method
Test 'N Tube NitriVer 3 Reagent Set, 0.002-0.500 mg/L
Contains: NitriVer 3 Reagent Test 'N Tubes
2608345 50 tests
(Also see NitriVer 3 Nitrite Reagent Powder Pillows.)

Nitrogen, Total Reagent Sets

(See Parameters Section page 176 for details.)
Test 'N Tube LR method, 0.5-25.0 mg/L N
2672245 25-50 tests
Test 'N Tube HR method, 10-150 mg/L N
2714100 25-50 tests
TNTplus LR method, 1-16 mg/L N
TNT826 25 tests
TNTplus HR method, 5-40 mg/L N
TNT827 25 tests
TNTplus UHR method, 20-100 mg/L N
TNT828 25 tests

Nitrogen (Total Kjeldahl) Reagent Set

(See Parameters Section page 176 for details.)

Colorimetric Method

Nessler Method, 1-150 mg/L
2495300 250 tests
(No Air/UPS Shipments)

Nitrogen (Simplified Total Kjeldahl) Reagent Set TNTplus™

0-16 mg/L N
TNT880 25 tests

Nitrogen, Total TNTplus™

See Nitrogen, Total Reagent Sets.

Nitrogen, Total Kjeldahl Indicator

See TKN Indicator.

m-Nitrophenol Indicator Solution

10 g/L, pH indicator
247632 100 mL DB

N-Serve

See 2-Chloro-6 (Trichloromethyl) Pyridine and Nitrification Inhibitor

Nutrient Broth, Dehydrated

General purpose medium for cultivating microorganisms that are not exacting in their food requirements. Specified by APHA for water, sewage and dairy products.
2560626 100 g

Nutrient Buffer Pillows

APHA, for preparing BOD dilution water. Ready for immediate use.
0.5-mL size for 300 mL
1416066 50
3-mL size for 3 liters
1486166 50
4-mL size for 4 liters
2436466 50
6-mL size for 6 liters
1486266 50
19-mL size for 19 liters
1486398 25
Respirometric Nutrient Buffer Pillows for BODTrak II Apparatus
2962266 50

O

Oxalic Acid Reagent, 150 g/L

For silica determinations
97549 500 mL

Oxalic Acid 2 Reagent

For silica determination; removes phosphate interference
1409417 3.78 L
(No Air/UPS Shipments)

Oxidase Reagent, 0.5 mL

2622500 50/pk

Oxygen Demand, Biochemical

See BOD.

Oxygen Demand, Chemical

See COD.

Oxygen, Dissolved

See Dissolved Oxygen.

Oxygen Scavenger Reagents

See DEHA Reagent Set.

Ozone Reagent AccuVac® Ampules

Range: 0-0.25 mg/L; 1-inch cell path
2516025 25
Range: 0-0.75 mg/L; 1-inch cell path
2517025 25
Range: 0-1.5 mg/L; 1-inch cell path
2518025 25

P

P-A Broth, Dehydrated

See Microbiological Products, pages 235-236 for Presence/Absence Broth.

PAN Indicator Solutions

0.3% colorimetric reagent for low level nickel and cobalt determinations, indicator for EDTA titration of copper
2150232 100 mL
0.1% colorimetric reagent for low level manganese determinations
2122426 50 mL SCDB
2122432 100 mL
2122449 500 mL
(See also Manganese Reagent Sets)

PCB Reagent Set

Immunoassay method, ppm thresholds
2773500 Up to 18 tests

Peptone Diluent

See Dilution Water; Dilution Water, Buffered, Sterile. Also see Microbiological Products, page 223.

Perchloric Acid

ACS Grade, CAS No. 7601-90-3
HClO₄, approx. 70%, FW = 100.46
75765 680 g
(No Air/UPS Shipments)
Assay: ≥69.0 but ≤72.0%

pH Standardization Buffers

See Buffers.

pH Electrode Storage Solution, 3M

2756549 500 mL
2756526 50 mL

pH Electrode Storage Solution

Powder Pillows
Each pillow makes 25 mL of storage solution
2657364 20

1,10-Phenanthroline Ferrous Sulfate

See *Ferriin Indicator Solution*.

Phenol

ACS Grade, CAS No. 108-95-2
 C_6H_5OH , FW = 94.11
75814 113 g

Phenol Reagent Powder Pillows

87299 100
For nonextraction method
2481569 100

Phenol 2 Reagent Powder Pillows

183699 100

Phenol Red Indicator Powder Pillows

For pH Test Kit (color cube)
2074846 50

Phenol Red Indicator Solutions

Standardized for colorimetric pH determination
Color range: pH 5.8 (yellow)-pH 7.3 (red)
21136 15 mL SCDB
21126 50 mL SCDB
21132 100 mL MDB
21149 500 mL
2657512 50 mL spec. grade
(for photometers)

Phenol Solution

30 g/L
211220 29 mL

Phenols Reagent Set

(See Parameters Section page 181 for details.)

Colorimetric Method

4-Aminoantipyrine Method, 0.002-0.200 mg/L as phenol
2243900 100 tests
No Air Shipments
Air Freight Configuration
2243901 100 tests

Phenolphthalein Indicator Solutions

1 g/L; pH indicator
189736 15 mL SCDB
189753 1 L
5 g/L, APHA
16236 15 mL SCDB
16232 100 mL MDB
16253 1 L

Phenolphthalein Powder Pillows

94299 100

Phenolsulfonphthalein

See *Phenol Red*.

Phenylarsine Oxide (PAO)

Cartridges for Digital Titrator

2259901† 0.00451 N
For chlorine:
1 digit = 1 $\mu\text{g/L Cl}_2$ in 200 mL
Digits x 0.00000564 = meq
2142001 0.0451 N
For chlorine:
Digits x 0.01 = mg/L Cl_2 in 200 mL
Digits x 0.0000564 = meq
199901† 0.00564 N
PAO Titrant

Phenylarsine Oxide (PAO)

Standard Solutions

PAO Titrants (also available in Digital Titrator cartridges)
0.00564 N
199942 100 mL
199953† 1 L
199917† 3.78 L

Phenylarsine Oxide (PAO) Titrant, 0.00564N

Total and/or Free Chlorine (Amperometric Method)
2700349 500 mL

Phosphate Buffer Solution Pillows, Sterile

AODC Procedure for Total Bacteria
2375866 50

Phosphate Pretreatment Powder Pillows

1450199 100

Phosphate 2 Reagent Powder Pillows

106199 100

Phosphate Reagent

Also see *Phosphorus Reagents*.

Phosphate (Acid Hydrolyzable) Reagent Set

(See Parameters Section—Phosphorus pages 183-184 for details.)
Colorimetric Method
Test 'N Tube Total and Acid Hydrolyzable Phosphate Reagent Set, 0.06-3.50 mg/L PO_4
2742745 50 tests

Phosphate Standard Solutions as PO_4 (NIST)

1 mg/L
256949 500 mL
3 mg/L
2059716 946 mL
2059703 2.9 L
10 mg/L
1420416 946 mL
15 mg/L
1424342 100 mL
30 mg/L
1436716 946 mL
50 mg/L, 10-mL Voluette Ampule
17110 16
50 mg/L 2-mL PourRite Ampules
17120 20
50 mg/L
17149 500 mL
100 mg/L
1436832 100 mL MDB
500 mg/L, 10-mL Voluette Ampule
1424210 16
500 mg/L
1424232 100 mL MDB

Also see **Mixed Parameter Quality Control Standards on page 205**.

Phosphonates Reagent Set

Colorimetric Method
Persulfate/UV Oxidation Method, 0.1-5 mg/L, 1-125 mg/L
Contains: PhosVer 3 Phosphate Reagent Powder Pillows
10-mL sample
2429700 100 tests
25-mL sample
2244000 100 tests

Phosphoric Acid

ACS Grade, CAS No. 7664-38-2
 H_3PO_4 , approx. 85%, FW = 98.00
76215 2.5 L
Assay: $\geq 85.0\%$

Phosphoric Acid, 10%

For phenol distillation and wastewater preservation
1476932 100 mL MDB

Phosphorus, Rapid Liquid™ Reagents

For rapid liquid high-range phosphorus, 0.3-45.0 mg/L PO_4 Molybdo vanadate Reagent
2076049 500 mL

Phosphorus, Reactive, Rapid Liquid™ Reagents

For rapid liquid reactive phosphorus, 19-3000 $\mu\text{g/L PO}_4$, low-range Molybdate Reagent Solution
2599849 500 mL
Ascorbic Acid Solution
2599949 450 mL
Ascorbic Acid Powder
2651255 48 g

Phosphorus Reagent Set Acid Hydrolyzable Phosphorus

Acid Hydrolyzable and Total Phosphate TNT Reagent Set Ascorbic Acid Method, 0.06-3.50 mg/L PO_4
2742745 25-50 tests

Phosphorus, Reactive

(See Parameters Section page 183 for details.)
Amino Acid Method, 0.23-30.00 mg/L PO_4
2244100 100 tests
Ascorbic Acid Method, Rapid Liquid, 19-3000 $\mu\text{g/L PO}_4$
2678600 250 tests
Ascorbic Acid Method, PhosVer 3 Powder Pillows 10-mL Sample, 0.02-2.50 mg/L PO_4
2106069 100
2106028 1000
25 mL Sample, 0.02-2.50 mg/L PO_4
212599 100
212528 1000
Ascorbic Acid Method, PhosVer 3 AccuVac Ampules, 0.02-2.50 mg/L PO_4
2508025 25
Ascorbic Acid Method, PhosVer 3 TNT Vials, 0.06-5.00 mg/L PO_4
2742545 25-50 tests
Reactive Phosphorus TNTplus, 1.6-30.0 mg/L PO_4
TNT846 25
Molybdo vanadate Method, 0.3-45.0 mg/L PO_4 Molybdo vanadate Phosphorus Reagent
2076032 100 mL
2076049 500 mL
Molybdo vanadate Reagent AccuVac Ampules
2525025 25
Molybdo vanadate Method TNT Vials, 1.0-100.0 mg/L PO_4
2767345 25-50 tests

Phosphorus, Reactive and Total Reagent Sets

(See Parameters Section pages 183-184 for details.)

Ascorbic Acid Method
TNTplus LR Method, 0.05-1.5 mg/L P (0.15-4.5 mg/L PO_4)
TNT843 25
TNTplus HR Method, 0.5-5 mg/L P (1.5-15.0 mg/L PO_4)
TNT844 25
TNTplus UHR Method, 2-20 mg/L P (6-60 mg/L PO_4)
TNT845 25

†Chemical Stability—See page 201.

Phosphorus, Total Reagent Sets

(See Parameters Section pages 183-184 for details.)
 Total Phosphorus Reagent Set, HR
 Molybdovanadate Method TNT,
 1.0-100.0 mg/L PO₄
2767245 25-50 tests
 Total Phosphorus Reagent Set, LR
 Ascorbic Acid Method TNT, 0.06-3.50 mg/L PO₄
2742645 25-50 tests
 Total Phosphorus Digestion Reagent Set
 Includes Sulfuric Acid, Sodium Hydroxide and
 Potassium Persulfate Powder Pillows
 For digestion prior to analysis by a Reactive
 Phosphorus method
2459000 100 tests

Phosphorus 1 Reagent

Used for phosphorus determination in food and
 feed samples
2260549 500 mL

Phosphorus 2 Reagent

Used for phosphorus determination in food and
 feed samples
2260649 500mL

Phosphorus Standard Solutions as P (NIST)

25 mg/L, 10-mL Voluette Ampule
2109210 16
 1000 mg/L
2321142 100 mL

PhosVer® 3 Phosphate Reagent

AccuVac Ampules
2508025 25
 Powder Pillows 5-mL sample
2209999 100
220928 pk/1000
 10-mL sample
2106069 100
2106028 pk/1000
 25-mL sample
2125999 100
212528 pk/1000

Phthalate-Phosphate Reagent Powder Pillows

For low-level determination of nickel and cobalt
 10-mL sample
2615199 100
 25-mL sample
2150166 50

Plate Count Agar, Dehydrated

(TGY agar: Tryptone-glucose-yeast agar)
 For standard plate count, APHA procedure
2177826 100 g
 (See Microbiological Products, pages 229-237 for
 prepared media.)

Polyseed®

BOD Seed Inoculum
2918700 50 capsules

Polyvinyl Alcohol Dispersing Agent

Ammonia Method for soils, sludges and
 wastewater samples
2376526 50 mL SCDB
2376549 500 mL

Polyvinyl Alcohol Solution

Suitable for crude protein determination in feeds
 20 g/L
2110042 100 mL

Porphyrin 1 Reagent Powder Pillows

For copper porphyrin method
 10-mL sample
2603549 100
 25-mL sample
2187469 100

Porphyrin 2 Reagent Powder Pillows

For copper porphyrin method
 10-mL sample
2603649 100
 25-mL sample
2187569 100

Potassium Acid Phthalate

Primary standard acid, ACS Grade
 CAS No. 877-24-7
 C₈H₅O₄K, FW = 204.23
31534 500 g
 Assay: ≥99.95 but ≤100.05%

Potassium Adjustment Powder

See *Potassium Ionic Strength Adjustor*.

Potassium Biiodate Standard Solution

0.025 N
31249H† 500 mL

Potassium Chloride

ACS Grade, CAS No. 7447-40-7
 KCl, FW = 74.55
76401 454 g

Potassium Chloride Reference Electrolyte Gel Cartridges

2546902 2/pk

Potassium Chloride Solution

50% saturated; for use in DO probe,
1429323 25 mL SCDB

Potassium Chloride Standard Solutions (NIST)

Also suitable for standardizing conductivity
 apparatus.
 74.55 mg/L KCl (0.001M), 146.9 μS/cm
2974226 50 mL
2974249 500 mL
 745.5 mg/L KCl (0.01M), 1412 μS/cm
2974326 50 mL
2974349 500 mL
 7455 mg/L KCl (0.1M), 12,890 μS/cm
2974426 50 mL
2974449 500 mL
 35 ppt KCl Salinity, 53 mS/cm
2714349 500 mL
 35 ppt KCl Salinity, 53 mS/cm
2714342 100 mL

Potassium Chromate

ACS Grade, CAS No. 7789-00-6
 K₂CrO₄, FW = 194.20
16534H 500 g

Potassium Cyanide

ACS Grade, CAS No. 151-50-8
76714 125 g
 Assay: ≥96.0%

Potassium Dichromate Standard Solutions

1.000 N K₂Cr₂O₇
2197153 1 L

Potassium Hydrogen Phthalate

See *Potassium Acid Phthalate*.

Potassium Hydroxide Pellets

ACS Grade, CAS No. 1310-58-3 KOH,
 approx. 85%, FW = 56.10
31434 500 g
 Assay: ≥85%

Potassium Hydroxide Standard Solutions

1.0 N
2314426 50 mL SCDB
 8.00 N
28232H 100 mL MDB
28249 500 mL
 12.0 N
23032 100 mL MDB
23049H 500 mL

Potassium Iodide

ACS Grade, CAS No. 7681-11-0
 KI, FW = 166.01
16701H 454 g
16726H 100 g

Potassium Iodide-Iodate Standard Solutions

0.00125 N (equivalent to 10 mg/L DO)
40149† 500 mL
 0.0125 N (APHA for sulfite)
1400153† 1 L

Potassium Iodide Powder Pillows

For test kits and lab methods
107799 100
 For surface finishing titrations
2059996 50

Potassium Iodide Solutions (NIST)

30 g/L
34332 100 mL MDB
34349 500 mL
 100 g/L
1228949 500 mL
 20%
1456842 100 mL

Potassium Iodide Starch Test Paper

Vial of 100 test strips
2351600 each

Potassium Iodide Swiftest Dispenser for AutoCAT Chlorine

Swiftest bulk dispenser with Potassium Iodide
2834100 250 tests
 Replacement vial
107760 250 tests

Potassium Permanganate

ACS Grade CAS No. 7722-64-7
 FW = 158.04
16801H 454 g

Potassium Permanganate Solution

1 g/L
1416442 100 mL

Potassium Permanganate Standard Solution

0.1 N
2321753† 1 L

Potassium Persulfate

ACS Grade, CAS No. 7727-21-1
 K₂S₂O₈, FW = 270.33
2617501 454 g
 Assay: ≥99.0%

†*Chemical Stability—See page 201.*

Potassium Persulfate — Silver

Potassium Persulfate Powder Pillows

For total phosphate digestion (hot plate)
245199 100
For phosphonate test and Total Phosphate TNT
2084769 100

Potassium Phosphate, Monobasic

ACS Grade, CAS No. 7778-77-0
Suitable for preparation of microbiological dilution water and pH buffers
 KH_2PO_4 , FW = 136.09
17001H 454 g

Potassium 1 Reagent

1432198 25

Potassium 2 Reagent

Solution pillows
1432298 25

Potassium 3 Reagent Powder Pillows

1432399 100

Potassium Sodium Tartrate

See *Rochelle Salt*.

Potassium Standard Solutions as K (NIST)

100 mg/L
2351749 500 mL
250 mg/L, 10-mL Voluette Ampule
1479010 16

Potassium Sulfate, Anhydrous

ACS Grade, CAS No. 7778-80-5
 K_2SO_4 , FW = 174.27
2340501 454 g

Presence-Absence (P-A) Broth, Dehydrated

Used to detect pollution in treated or potable water; described in the 16th ed., Standard Methods.

2280934 500 g
(See Microbiological Products, pages 229-237 for prepared media.)

Pretreatment Reagent Set

For reduction of nitrite interferences in NO_3 test
Contains: Bromine Water (30 g/L), Phenol Solution (30 g/L)
2438700

Process Analyzer Reagents

See pages 466-467.

2-Propanol

(See *Isopropyl Alcohol*)

Proteose Peptone #3

2815134 500 g

Pyridine

ACS Grade, CAS No. 110-86-1
 $\text{C}_5\text{H}_5\text{N}$, FW = 79.10
1446949 500 mL

3-(2-Pyridyl)-5,6-Bis(4-Phenylsulfonic Acid)-1,2,4-Triazine, Monosodium Salt, Monohydrate

(See *FerroZine® Iron Reagent*)

Q, R

QAC Reagent 1 Powder Pillows

2401066 50

QAC Reagent 2 Powder Pillows

2401268 25

Quaternary Ammonium Compound (QAC) Standard

100 mg/L CTAB
2415342 100 mL

R2A Agar, Dehydrated

Low nutrient medium for enumeration and cultivation of bacteria from potable water. Used for pour or spread plate and MF methods; described in the 16th edition of Standard Methods.
2281034 500 g

Reference Electrolyte Solution Cartridges

For Hach One® pH, ORP and Ag/AgCl electrodes. Not for use with 48000 or 50000 series electrodes.
2195001

Resin, Demineralizer, Dried

Replacement for resin in Hach Demineralizer Bottles (indicating type) 95 g of dried resin is equivalent to 113 g wet
31114H 95 g
380 g of dried resin is equivalent to 454 g wet
31101H 380 g

Rochelle Salt Solution

(Potassium sodium tartrate)
172533 29 mL DB
172549 500 mL

Rochelle Salt-PVA Reagent

For ammonia determination
2199432 100 mL MDB
2199449 500 mL

Rosolic Acid

Used to increase selectivity of m-FC Broth.
2162921 1 g

RoVer® Rust Remover

30001 454 g
30012 454 g (12 bottles per case)
30040 18 kg

S

Salt

See *Sodium Chloride*.

Sample Blank Vials

For use with TNTplus methods
TNT919 5/pk

Selenium Reagent Set

Diaminobenzidine method, 0.01-1.00 mg/L Se
2244200 100 tests

Selenium Standard Solution (NIST)

1000 mg/L Se
2240742 100 mL

Silica, Rapid Liquid™ Reagents

Amino Acid F Reagent Powder
2651155 55 g
Amino Acid F Dilution Solvent
2353011 475 mL
Citric Acid F Reagent Solution
2254249 500 mL
Molybdate 3 Reagent Solution
199549 500 mL

Silica Analyzer Reagents

See page 467.

Silica Gel, 100-200 mesh

2665034 500 g

Silica Gel with Indicator

For use as desiccant
1426901 454 g

Silica Reagent Sets

(See Parameters Section page 187 for details.)

Heteropoly Blue Method - Low Range

Ultralow Range Rapid Liquid,
3-1000 µg/L SiO_2
2678500 250 tests
Ultralow Range Bulk Solution,
3-1000 µg/L SiO_2
2553500 100 tests
Ultralow Range Ampuled Reagents,
3-1000 µg/L SiO_2
2581400 40 tests
Low Range, 0.01-1.60 mg/L SiO_2
10-mL Sample, 0.010-1.600 mg/L SiO_2
2459300 100 tests
25-mL Sample - for older instruments
2346800 100 tests

Silicomolybdate Method - High Range

1-100 mg/L SiO_2
10-mL Sample
2429600 100 tests
25-mL Sample
2244300 100 tests

Silica 1 Reagent

27026 50 mL SCDB
27032 100 tests MDB
27053 1 L

Silica 3 Reagent

Powder pillows
27169 100

Silica Standard Solutions as SiO_2 (NIST)

0.5 mg/L
2100817 3.78 L
1 mg/L
110649 500 mL
10 mg/L
140349 500 mL
25 mg/L
2122531 236 mL
50 mg/L
111729 200 mL
1000 mg/L
19449 500 mL

Silicone Oil

126936 15 mL SCDB

Silver Diethyldithiocarbamate

ACS Grade, CAS No. 1470-61-7
 $(\text{C}_2\text{H}_5)_2\text{NCS}_2\text{Ag}$, FW = 256.13
1447624 25 g
Suitability for determination of arsenic:
Passes test

Silver Nitrate

ACS Grade, CAS No. 7761-88-8
 AgNO_3 , FW = 169.87
17314H 113 g

Silver Nitrate Cartridges for Digital Titrator

1439601† 0.2256 N
 Digits x 0.1 = mg/L Cl^- in 100 mL
 Digits x 0.000282 = meq
1439701 1.128 N
 Digits x 10 = mg/L Cl^- in 5 mL
 Digits x 0.00141 = meq

Silver Nitrate Standard Solutions

0.0141 N (for chloride test)
31653† 1 L
 0.100 N
2321953 1 L
 0.141 N
1255149† 500 mL

Silver Reagent Set

Colorimetric method, 0.02-0.70 mg/L
2296600 50 tests

Silver 1 Reagent Powder Pillows

2293566 50

Silver 2 Reagent Solution Pillows

2293666 50

Silver Standard Solution as Ag (NIST)

1000 mg/L (HNO_3 matrix)
1461342 100 mL

Silver Sulfate

ACS Grade, CAS No. 10294-26-5
 Ag_2SO_4 , FW = 311.83
33414 113 g

Soap Solution, Hardness Demonstration

50-mL sample
39512 50 mL DB
39532 100 mL MDB
39553 1 L
 25-mL sample
46212 50 mL DB
46249 500 mL

Sodium Acetate, Trihydrate

ACS Grade, CAS No. 6131-90-4
 $\text{CH}_3\text{COONa} \cdot 3\text{H}_2\text{O}$, FW = 136.08
17801H 454 g
 Assay: 99.0-100.5%

Sodium Arsenite Solution, 5.0 g/L

Total and/or Free Chlorine (Colorimetric or Titrimetric Method) and Fluoride (SPADNS Method)
104732 100 mL

Sodium Bicarbonate

ACS Grade, CAS No. 144-55-8
 NaHCO_3 , FW = 84.01
77601 454 g
 Assay: $\geq 99.7\%$ but $\leq 100.3\%$

Sodium Carbonate Solution

For tannin-lignin
67532 100 mL MDB
67549 500 mL

Sodium Carbonate Standard Solutions

0.02 N
18149 500 mL

Sodium Chloride

ACS Grade, CAS No. 7647-14-5
 NaCl , FW = 58.44
18201H 454 g

Sodium Chloride Standard Solutions (NIST)

Also suitable for standardizing conductivity apparatus, $\mu\text{S}/\text{cm}$ ($\mu\text{mhos}/\text{cm}$)
85.47 mg/L NaCl, 180 $\mu\text{S}/\text{cm}$
2307542 100 mL
491 mg/L NaCl, 1000 $\mu\text{S}/\text{cm}$
1440026 50 mL
1440042 100 mL
1000 mg/L NaCl, 1990 $\mu\text{S}/\text{cm}$
210553 1 L
1000 mg/L as Cl^- (1648 mg/L NaCl)
18349 500 mL
10,246 mg/L NaCl, 18,000 $\mu\text{S}/\text{cm}$
2307426 50 mL
2307442 100 mL
2307449 500 mL
49 mg/L NaCl, 100 $\mu\text{S}/\text{cm}$
2971826 50 mL
2971842 100 mL
2971849 500 mL
491 mg/L NaCl, 1,000 $\mu\text{S}/\text{cm}$
1440042 100 mL
1440049 500 mL
5.37 g/L NaCl, 10,000 $\mu\text{S}/\text{cm}$
2972226 50 mL
2972242 100 mL
2972249 500 mL

Sodium Citrate Solution

For phosphate interference removal in silica test
1490849 500 mL
1490817 3.78 L

Sodium Electrode Storage Solution

4451659 50 mL

Sodium Hydroxide (Pellets)

ACS Grade, CAS No. 1310-73-2
 NaOH , FW = 40.00
18734 500 g
18765 2.5 kg
 Assay: $\geq 97.0\%$

Sodium Hydroxide Cartridges for Digital Titrator

1437701† 0.1600 N
 Digits x 0.1 = mg/L CaCO_3 acidity in 100 mL
 Digits x 0.0002 = meq
1437801† 0.3636 N
 Digits x 0.1 = mg/L CO_2 in 200 mL
 Digits x 0.000454 = meq
1484201 0.9274 N
 For volatile acids determination
1437901 1.600 N
 Digits = mg/L CaCO_3 acidity in 100 mL
 Digits x 0.002 = meq
1438001 3.636 N
 Digits = mg/L CO_2 in 200 mL
 Digits x 0.00454 = meq
1438101 8.00 N
 Digits x 0.01 = meq

Sodium Hydroxide Solution, 50% w/w

218049 500 mL

Sodium Hydroxide Standard Solutions

0.01 N
67132† 100 mL MDB
67153† 1 L
 0.02 N (N/50)
19353† 1 L
 0.0227 N (N/44)
19253† 1 L
 0.030 N
191132† 100 mL MDB
 0.035 N
2349332† 100 mL MDB
 0.05 N
1476453† 1 L
 0.100 N
19153† 1 L
 0.25 N
1476353 1 L
 1.000 N
104532 100 mL MDB
104553 1 L
 1.54 N
2743042 100 mL
 4.5 N
204053 1 L
 5.0 N
245026 50 mL SCDB
245032 100 mL MDB
245053 1 L
 6 N
2332453 1 L
 10 N
2545049 500 mL

Sodium Hydroxide-Thiosulfate Reagent

APHA, Nitrogen (Kjeldahl)
2340753 1 L

Sodium Monosulfide, Hydrate

See *Sodium Sulfide*.

Sodium Nitrite

ACS Grade, CAS No. 7632-00-0
 NaNO_2 , FW = 69.00
245201 454 g
 Assay: $\geq 97.0\%$

Sodium Periodate Powder Pillows

For manganese, cold periodate method and iron titrations
 10-mL sample
2107769 100
 25-mL sample
98499 100

Sodium/Potassium Ionic Strength Adjustor

Powder Pillows
4451569 100

Sodium Pyrophosphate, Crystal

ACS Grade, CAS No. 13472-36-1
 $\text{Na}_4\text{P}_2\text{O}_7 \cdot 10\text{H}_2\text{O}$, FW = 446.09
1429525 50 g
 Assay: 99.0-103.0%

Sodium Standard Solutions as Na (NIST)

100 mg/L
2318153 1 L
 1000 mg/L
1474949 500 mL

†Chemical Stability—See page 201.

Sodium Sulfate — Sulfate

Sodium Sulfate, Anhydrous

ACS Grade, CAS No. 7757-82-6
Na₂SO₄, FW = 142.04
709901 454 g

Sodium Sulfite, Anhydrous

ACS Grade, CAS No. 7757-83-7
Na₂SO₃, FW = 126.04
19501H 454 g
Assay: ≥98.0%

Sodium Thiosulfate Cartridges for Digital Titrator

2267301† 0.1130 N
Digits = mg/L Cl₂ in 5-mL sample
Digits x 0.000141 = meq
2267501† 0.2000 N
Digits x 0.01 = mg/L DO in 200-mL sample
Digits x 0.00025 = meq
2267601† 0.2068 N
Digits x 0.2 = mg/L CrO₄ in 50-mL sample
1440101† 2.00 N
Digits x 0.1 = mg/L DO in 200-mL sample
Digits x 0.0025 = meq

Sodium Thiosulfate, Pentahydrate

ACS Grade, CAS No. 10102-17-7
Suitable for dechlorinating water samples
Na₂S₂O₃·5H₂O, FW = 248.18
46001 454 g
Assay: 99.5-101.0%

Sodium Thiosulfate, Stabilized, Standard Solutions

0.00246 N
2408532 100 mL MDB
2408549 500 mL
0.00564 N
2408842 100 mL
2408853 1 L
0.0109 N
2408932 100 mL MDB
0.0113 N
2409032 100 mL MDB
2409049 500 mL
0.0246 N
2409232 100 mL MDB
2409249 500 mL
0.0250 N
2409353 1 L
2409317 3.78 L
0.0375 N
2409453 1 L

Sodium Thiosulfate, Stabilized, Cartridges, for Digital Titrator

2409101 0.02256 N
For chlorine:
Digits x 0.01 = mg/L Cl₂ in 100 mL
Digits x 0.0000282 = meq
2409301 0.0250 N
For dissolved oxygen:
Digits/100 = mg/L DO in 25 mL
Digits x 0.0000313 = meq
2409501 0.0451 N
For chlorine:
Digits = mg/L Cl₂ in 200 mL
Digits x 0.0000564 = meq
2686901 2.26 N
For hypochlorite (bleach):
0.5 Digit = 1 g/L Cl₂

Sodium Thiosulfate Powder Pillows

For use in Hach Silver Method
2293766 50

Sodium Thiosulfate Standard Solutions

0.025 N for DO/BOD titrations
35253† 1 L
0.1 N
32332† 100 mL MDB
32353† 1 L
0.125 N, 10-mL Voluette Ampule Standard
(Use for sulfite equivalent standard;
5000 mg/L as SO₃)
2267410 16
1.0 N
35126 50 mL SCDB

Sodium Thiosulfate Titrant for Hydrogen Peroxide

2408732 100 mL MDB

Soil Extraction Refill Kit

For PCB and TPH methods
2775200 20 tests

Solution 4

See *Wide Range-4 pH Indicator Solution*.

SPADNS Ampules

See *Fluoride Reagent (SPADNS) AccuVac Ampules*.

SPADNS Reagent for Fluoride

44442 100 mL
44449 500 mL
44453 1 L
44417 3.78 L
AccuVac Ampules
2506025 25

SPADNS2 Reagent for Fluoride

Arsenic-free formulation
2947549 500 mL
2947553 1 L
2947517 3.78 L
AccuVac Ampules
2527025 25

StabCal® Formazin Turbidity Standards

StabCal Ampule Calibration Kits
2659105 For 2100A
2659205 For Ratio XR & Ratio 2000
2659305 For Ratio Turbidimeter
2659405 For 2100P
2662105 For 2100N & 2100N IS
2659505 For 2100AN & 2100AN IS
StabCal Ampule Standard
2659802 For 2100N, 2100NIS, 2100AN, 2100ANIS each
StabCal Bulk Solution Calibration Kits
2659100 For 2100A
2659200 For Ratio XR & Ratio 2000
2659300 For Ratio Turbidimeter
2659400 For 2100P
2662100 For 2100N & 2100N IS
2659500 For 2100AN & 2100AN IS
2659600 For 1720C & 1720D

Bulk Suspensions (bottles)

< 0.1 NTU
2659742 100 mL
2659749 500 mL
0.30 NTU
2697942 100 mL
2697953 1000 mL
0.50 NTU
2698042 100 mL
2698053 1000 mL
1.0 NTU
2659842 100 mL
2659849 500 mL
10 NTU
2659942 100 mL
2659949 500 mL
20 NTU
2660142 100 mL
2660149 500 mL
100 NTU
2660242 100 mL
2660249 500 mL

StabCal® Low Range Verification Kit

0.30 and 0.50 NTU
2716300

Stannous Chloride Solution

APHA, Arsenic and Selenium
1456942 100 mL

Starch Indicator Solution (0.5%)

APHA, Oxidation-Reduction Indicator
34932 100 mL MDB
34953 1 L

Stearic Acid

Lab Grade, CAS # 57-11-4
2664934 500 g

s-TKN TNTplus™

0-16 mg/L N
TNT880 25 tests

Sulfamic Acid

Analytical Grade, CAS No. 5329-14-6
H₂NSO₃H, FW = 97.10
234401 454 g
Assay: ≥98.0%

Sulfamic Acid Powder Pillows

For chlorine, chromium, and sulfite determinations
105599 100
For dissolved oxygen testing, 300-mL sample
107399 100
For Model OX-DT Test Kit
2076266 50

Sulfate Extractant 1 Powder Pillows

Suitable for sulfate extraction in soils
2057799 50

Sulfate Standard Solutions as SO₄ (NIST)

50 mg/L
257849 500 mL
100 mg/L
89149 500 mL
1000 mg/L
2175749 500 mL
2500 mg/L, 10-mL Voluette Ampule
1425210 16
2500 mg/L
1425249 500 mL

Also see **Mixed Parameter Quality Control Standards** on page 205.

Sulfate TNTplus™, LR

40-150 mg/L SO₄
TNT864 25 tests

†Chemical Stability—See page 201.

Sulfate TNTplus™, HR

150-900 mg/L SO₄
TNT865 25 tests

SulfaVer® 4 Sulfate Reagent

For sulfate (0-100 mg/L SO₄)

AccuVac Ampoules
2509025 25
 Powder pillows 10-mL sample
2106769 100
 25-mL sample
1206599 100
1206528 1000

Sulfide Inhibitor Reagent

Powder Pillows
241899 100

Sulfide 1 Reagent

181632† 100 tests MDB
181649† 500 mL

Sulfide 2 Reagent

181732 100 tests MDB
181749 500 mL

Sulfide Reagent Set

Colorimetric Method
 Methylene Blue Method, 5-800 µg/L S²⁻
 Contains: Sulfide 1 and 2 Reagent Solutions
2244500 100 tests

Sulfite Equivalent Standard

See *Sodium Thiosulfate Standard Solution*,
 0.125 N.

Sulfite 1 Reagent

Powder pillows
220399 100

Sulfite 3 Reagent

70532 100 mL MDB
70553 1 L

Sulfite Reagent Sets

(See Parameters Section page 191 for details.)

Buret Titration Method

Iodometric Method, 0-500+ mg/L as SO₃²⁻
2459800 100 tests

Digital Titrator Method

Iodometric Method, 4-400 mg/L SO₃²⁻
2272300 100 tests

Drop Count Titration Method

Iodometric Method, 0-200 mg/L as SO₃²⁻
 Contains: Sulfamic Acid Powder Pillows, Sulfite 1
 Reagent Powder Pillows, Sulfite 3 Solution
2440000 100 tests

Sulfite Standard Solution as SO₃

Prepared with stabilized Sodium Thiosulfate
 15 mg/L
2408449† 500 mL

Sulfite Standard Solution as SO₃

5000 mg/L, 10-mL Vial Ampule
 (0.125 N Sodium Thiosulfate)
2267410 16

Sulfosalicylic Acid Powder Pillows

2081669 100

Sulfuric Acid, 36 N

ACS Grade, CAS No. 7664-93-9
 H₂SO₄, FW = 98.08
97949 500 mL
97909 4 kg

**Sulfuric Acid Cartridges
for Digital Titrator**

1438801 0.1600 N
 Digits x 0.1 = mg/L CaCO₃ alkalinity in 100 mL
 Digits x 0.0002 = meq
1438901 1.600 N
 Digits = mg/L CaCO₃ alkalinity in 100 mL
 Digits x 0.002 = meq
1439101 8.00 N
 Digits x 0.01 = meq

Sulfuric Acid Standard Solutions

0.020 N (N/50)
20342 100 mL
20353 1 L
20356 4 L
 0.030 N
2620532 100 mL
2620553 1 L
 0.035 N
2349732 100 mL MDB
 0.040 N
2339349 500 mL
 0.100 N
20232H 100 mL MDB
20253 1 L
 0.500 N
212132 100 mL
 1.000 N
127032 100 mL MDB
127053 1 L
 1.900 N
2183032 100 mL MDB
 5.25 N
244932 100 tests MDB
244953 1 L
 10 N
93153 1 L
 19.2 N
203832 100 mL MDB
203849 500 mL

T**Tannic Acid**

Analytical Grade, CAS No. 1401-55-4
79114 113 g
 Suitability as tannin standard

Tannin-Lignin Reagent Sets

Colorimetric Method
 Tyrosine Method, 0.1-9.0 mg/L
 (Color disc 0-150 mg/L) as tannic acid
 Contains: Sodium Carbonate Solution, and
 TanniVer 3 Tannin-Lignin Reagent
 25-mL sample
 (colorimeters & spectrophotometers)
2244600 100 tests

TanniVer® 3 Tannin-Lignin Reagent

256032 100 mL MDB
256049 500 mL

TCMP

See *2-Chloro-6 (Trichloromethyl) Pyridine*.

THM

See *Total Trihalomethane*.

Thymol Blue Indicator Solutions

Standardized for colorimetric pH determination
 pH Range 7.4-9.5
25732 100 mL MDB

Thymolphthalein Indicator Solution

1.0 g/L
 pH indicator: Visual transition interval: pH 8.8
 (colorless)-pH 10.5 (blue)
2185336 15 mL SCDB

TISAB

See *Fluoride Ionic Strength Adjustment Buffer*.

TitraVer® Cartridge for Digital Titrator

See *EDTA Cartridges for Digital Titrator*.

TitraVer® Hardness Reagent

EDTA, Disodium Salt, ACS Grade
20426 100 g
20434 500 g

TitraVer® Hardness Titrant

See *EDTA Standard Solutions*.

TKN Indicator Solution

For Total Kjeldahl Nitrogen Test
2251926 50 mL SCDB

TKN Testing

See *Nitrogen-Kjeldahl*.

TTC Solution, 1%, presterilized

(Enhances visibility of bacteria)
2406042 100 mL

Toluene

ACS Grade, CAS No. 108-88-3
 C₆H₅CH₃, FW = 92.14
1447049 500 mL
1447017 4 L (No Air Shipments)

Total Organic Carbon Reagent Set

Colorimetric Method (TOC)

Low Range 0.3-20.0 mg/L
2760345 50 vials
 Mid Range 15-150 mg/L
2815945 50 vials
 High Range 100-700 mg/L
2760445 50 vials

**Total Organic Carbon (TOC)
Standard Solution**

1000 mg/L as C 20 mL ampules
2791505 5/pk

Also see **Mixed Parameter Quality Control
Standards on page 205.**

**Total Trihalomethanes Reagent Set
(Colorimetric method) (THM)**

Range: 6-200 ppb
2790800 50 tests

THM Standard

10 ppm Chloroform, 2 mL Ampules
2756707 7/pk

ToxTrak Toxicity Reagent Set

(See Parameters Section page 193 for details.)
2597200 25-49 tests

TPH Reagent Set

Immunoassay method, ppm threshold
2774300 up to 18 tests

TPTZ Iron Reagent

For low range total iron determination
 AccuVac Ampoules
2510025 25
 Powder Pillows for 10-mL sample
2608799 100
 Powder Pillows for 25-mL sample
2275699 100
 See also *Iron, FerroMo™ Reagent*.

Triazole Standard Solution

See *Benzotriazole Standard Solution*.

†Chemical Stability—See page 201.

Triazole Reagent Powder Pillows

2141299 100

Trihalomethane

See *Total Trihalomethane*.

3,4,5-Trihydroxybenzoic Acid

See *Gallic Acid, Monohydrate*.

2,4,6-Trihydroxy-1,3,5-Triazine

See *Cyanuric Acid*.

Triphenyltetrazolium Chloride

Solution (TTC) 1%

Additive ingredient for microbiological medium

2406042 100 mL

Tryptic Soy Agar, Dehydrated

General purpose medium used without blood for cultivating fastidious microorganisms

2565926 100 g

Tryptic Soy Broth, Dehydrated

General purpose medium for cultivating fastidious and nonfastidious microorganisms

2253534 500 g

Turbidity Standards

See *StablCal*.

U

UniVer® 3 Hardness Reagent

Powder
21320H 28 g

21301H 454 g

Powder pillows
96299 100

V, W

Volatile Acids Reagent Sets

(See Parameters Section page 196 for details.)

Colorimetric Method

Esterification, 27-2800 mg/L Acetic Acid

2244700 100 tests

Digital Titrator Method, 100-2400 mg/L Acetic Acid

2460200 100 tests

Volatile Acids Standard Solutions as Acetic Acid (NIST)

1000 mg/L

1420542† 100 mL

62,500 mg/L, 10-mL Voluette Ampule

1427010 16

Volatile Acids TNTplus™

50-2500 mg/L Acetic Acid

TNT872 25 tests

Water, Buffered Dilution

See *Microbiological Products* page 237.

Water, Deionized

(Dem mineralized Type 2 Water)

27242 100 mL

27249 500 mL

27256 4 L

Specific conductance: ≤ 1 $\mu\text{S}/\text{cm}$

($\mu\text{S} = \text{micromho}$)

Silica (SiO_2): ≤ 30 $\mu\text{g}/\text{L}$

Chloride (Cl): ≤ 20 $\mu\text{g}/\text{L}$

Hardness: Negative

Consumption of KMnO_4 : Negative

Water, Organic Free

For UV-254 and TOC methods

2641549 500 mL

Water, Ultrapure Aldehyde-Free

2594649 500 mL

Water, Zero Standard Solution

For low range phosphate analyzer

2600103 2.9 L

Wetting Solution

See *Triton X*.

Wide Range pH Indicator Solution

For colorimeters and spectrophotometers

2329649† 500 mL

Wide Range-4 pH Indicator Solution

For test kits

2329332 100 mL MDB

2329353 1 L

Z

Zinc

CAS No. 7440-66-6, AW = 65.37 Zn

20 mesh, ACS Grade

79501 454 g

Zinc Acetate Solution

2 N, preservative for sulfide samples,

1470332 100 mL MDB

Zinc Standard Solutions as Zn (NIST)

25 mg/L, 10-mL Voluette Ampule

1424610 16

100 mg/L

237842 100 mL

1000 mg/L (HCl matrix)

1417742 100 mL

ZincoVer® 5 Zinc Reagent

Powder Pillows

20-mL sample

2106669 100

50-mL sample

1403268 25

Zinc Reagent Set

Zincon Method

20-mL sample 0.01-3.00 mg/L Zn

2429300 100 tests

50-mL sample 0.01-2.00 mg/L Zn

2244800 100 tests

†*Chemical Stability*—See page 201.