

Chemicals & Reagents: Parameters

Parameters

See Inside!

- **NEW!** Alkalinity TNTplus™
See page 132.
- **NEW!** Freechlor F Reagent Solution
See page 145.
- **NEW!** Total Kjeldahl Nitrogen (s-TKN™)
See page 176.
- **NEW!** Volatile Acids TNTplus™
See page 196.

...and Much More!



Be Right™



PermaChem™ Powder Pillows
Our most cost-conscious reagent platform.

SwiftTest™ Reagent Dispenser
No need to open containers.



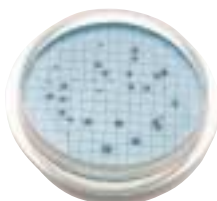
TNT (Test 'N Tube™)
The right blend of simplicity and economy.

AccuVac® Ampule
Quick, easy and economical.



TNTplus™ Chemistries
No reagent blank necessary—saves time and money.

Prepared Microbiological Media



Single and Multi-Parameter Standards



SpecGel™ Standards



Voluette® Ampule Standards

Hach Prepared Reagents

PermaChem™ Powder Pillows

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

SwiftTest™ Reagent Dispenser

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

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.

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.

TNTplus™ Vial Chemistries (13 mm)

Hach's DR 5000™ and DR 2800™ 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.

Titrant Cartridges

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

Prepared Microbiological Media

Eliminate measuring, mixing, and sterilization.

Hach Standards

Multi and Single Parameter Standards

Easy-to-use, no dilutions necessary—combined analytes result in increased efficiency. Typical drinking water and wastewater parameters and concentrations. Single parameter standards are available for most applications.

SpecGel™ 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.

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 within 30-days of receipt for full refund.

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

Chlorine *See pages 144-147 for details.*

Description	Prod. No.
Free Chlorine, 10 mL Powder Pillows, pk/100	2105569
Free Chlorine TNTplus, pk/39	TNT866
Free Chlorine, SwiftTest Dispenser + Reagent (250 tests)	2802300
Free Chlorine, SwiftTest Dispenser Reagent (refill)	2105560
Free and Total Chlorine TNTplus, pk/39	TNT866T
Total Chlorine, 10 mL Powder Pillows, pk/100	2105669
Total Chlorine, SwiftTest Dispenser+ Reagent (250 tests)	2802400
Total Chlorine, SwiftTest Dispenser Reagent (refill)	2105660
Spec \checkmark Gel Secondary Standard Kit-LR Chlorine, DPD	2635300
Spec \checkmark Gel Secondary Standard Kit-HR Chlorine, DPD	2893300



Spec \checkmark ™ Standards

COD (Chemical Oxygen Demand) *See pages 151-152 for details.*

Description	Prod. No.
COD Digestion Vials—16 mm, LR, pk/25	2125825
COD Digestion Vials—16 mm, LR, pk/150	2125815
COD TNTplus—13 mm, LR, pk/25	TNT821
COD TNTplus—13 mm, LR, pk/150	TNT82106



COD TNTplus™

Fluoride *See pages 158-159 for details.*

Description	Prod. No.
SPADNS Fluoride AccuVac, pk/25	2506025
SPADNS Reagent Solution, 500mL	44449
SPADNS 2 ARSENIC-FREE Fluoride AccuVac, pk/25	2527025
SPADNS 2 ARSENIC-FREE Reagent Solution, 500mL	2947549
Spec \checkmark Gel Secondary Standard Kit - Fluoride	2712500



Nitrate TNTplus™

Iron *See pages 166-167 for details.*

Description	Prod. No.
FerroVer Iron Reagent Powder Pillows, 10mL, pk/100	2105769
Iron TNTplus, pk/25	TNT858

Nitrate *See pages 173-174 for details.*

Description	Prod. No.
Nitrate Reagent Set, 10 mL, LR, 100 tests	2429800
Nitrate, Nitrogen TNTplus, LR, pk/25	TNT835
Nitrate, Nitrogen TNTplus, HR, pk/25	TNT836



Ammonia TNTplus™

Ammonia *See pages 134-136 for details.*

Description	Prod. No.
Ammonia Reagent Set, Salicylate, 10 mL, 100 tests	2668000
Ammonia Reagent Set, Nessler's, 250 tests	2458200
Ammonia TNTplus, ULR, pk/25	TNT830
Ammonia TNTplus, LR, pk/25	TNT831
Ammonia TNTplus, HR, pk/25	TNT832

Phosphorus *See pages 183-184 for details.*

Description	Prod. No.
PhosVer 3 Powder Pillows, 10mL, pk/100	2106069
Phosphorus TNTplus, Reactive, Pk/25	TNT846
Phosphorus TNTplus, Reactive and Total, LR, pk/25	TNT843
Phosphorus TNTplus, Reactive and Total, HR, pk/25	TNT844
Phosphorus TNTplus, Reactive and Total, UHR, pk/25	TNT845

Ozone *See page 178 for details.*

Description	Prod. No.
Ozone AccuVac, LR, pk/25	2516025
Ozone AccuVac, MR, pk/25	2517025
Ozone AccuVac, HR, pk/25	2518025
Spec \checkmark Gel Secondary Standard Kit - Ozone MR	2708000



Ozone and Fluoride AccuVac® Ampules



**Total Alkalinity
Test Strips**
Prod. No. 2744850
See page 132.



High Range Chlorine Kit
Prod. No. 2444400
See page 147.



Iron Color Cube Kit
Prod. No. 1400800
See page 167.



Storm Water Kit
Prod. No. 2481300
See page 281.



**Alkalinity Test Kit with
Digital Titrator**
Prod. No. 2063700
See page 287.



**Chlorine Pocket
Colorimeter II**
Prod. No. 5870000
See page 147.



Selecting a Hach test kit that meets your budget and testing needs is easy. Hach offers single parameter kits with easy-to-use color comparators and comprehensive portable laboratories with advanced instruments—for fast, accurate results in the field or in the lab. Plus, including 50 or 100 tests means that Hach test strips and test kits provide low cost on every test.

Hach Test Strips

- Easy to use, disposable, and inexpensive
- A great way to get a quick answer while in the field or the lab

Drop Count Titration Kits

- A simple, economical titration method available for many parameters
- All required reagents, solutions, and glassware are together in one rugged kit

Color Cube Kits

- Another low-cost method using a stepped color comparator
- Achieve fast results with an easy to carry test kit

Color Disc Kits

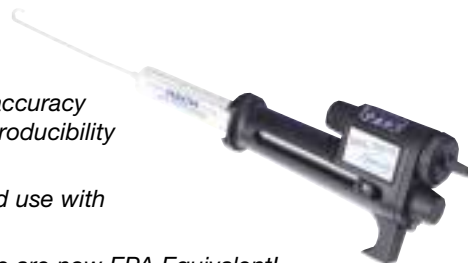
- The most accurate visual test kit method—Hach's color wheel provides fast, accurate comparisons
- Continuous color gradient allows better resolution of the concentration reading than stepwise comparators



Digital Titrator

(included in many test kits)

- Offers higher levels of precision and accuracy than drop count procedures, with reproducibility comparable to a buret titration
- Rugged titration device—ideal for field use with no glass burets required
- NEW! Many Digital Titrator procedures are now EPA Equivalent!



Rugged Portable Instruments

(included in many test kits)

- Provide the highest level of accuracy and repeatability
- Portable colorimeters, spectrophotometers, pH, DO, and conductivity meters are included in many portable laboratories and test kits
- Chlorine Pocket Colorimeter II—EPA Approved, Prod. No. 5870000



Most Popular Test Kits & Test Strips

Aqua Ammonia Test Kit Model NI-HRDT

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

Prod. No.	Range	No. of Tests
2930400	5-35% (50-350 g/L) as NH ₃	100
Also available:		
2930500	Reagent Set for HR Aqua Ammonia Kit Includes: 8.0 N Sulfuric Acid Titration Cartridge and Wide Range pH Indicator Solution	



Free and Total Chlorine Test Strips

- Accurate and easy to use—just dip and read!
- Great for quick, on-site evaluations of chlorine levels

Prod. No.	Range	No. of Tests
2745050	0-10 mg/L 0, 0.5, 1.0, 2.0, 4.0, 10.0 mg/L	Bottle of 50
2793944	Also available individually wrapped, box of 250.	



Arsenic Test Kit

- No lab analysis needed—detect arsenic levels in the field to assess compliance with the new EPA Arsenic Rule
- Reliable test strip method recovers 100% of inorganic arsenic in samples

Prod. No.	Range	No. of Tests
2800000	0-500 µg/L (ppb) 0, 10, 30, 50, 70, 300, 500 µg/L (ppb)	100



Free and Total Chlorine Test Kit Model CN-66

- Our most popular test kit!
- Quickly and accurately measure chlorine levels in the field or lab

Prod. No.	Range	No. of Tests
223101	0.1 – 3.5 mg/L	50 Free Cl ₂ 50 Total Cl ₂
Other kits also available:		
223102	Model CN-66F Free Chlorine	100
223103	Model CN-66T Total Chlorine	100



Nitrate and Nitrite Test Strips

- Accurate and easy to use – just dip and read!
- Get results in less than 1 minute, in the field or in the lab

Prod. No.	Range	No. of Tests
2745425	Nitrate: 0-50 mg/L 0, 1, 2, 5, 10, 20, 50 mg/L Nitrite: 0-3 mg/L 0, 0.15, 0.3, 1, 1.5, 3.0 mg/L	Bottle of 25



5-in-1 Water Quality Test Strips

- Great for quick, on-site evaluations of water quality
- Five water quality measurements on 1 strip!

Prod. No.	Parameter	Range	Steps	No. of Tests
2755250	Free Chlorine	0-10 mg/L	0, 0.5, 1.0, 2.0, 4.0, 10.0	Bottle of 50
	Total Chlorine	0-10 mg/L	0, 0.5, 1.0, 2.0, 4.0, 10.0	
	Total Hardness (as CaCO ₃)	0-25 gpg 0-425 mg/L	0, 1.5, 3, 7, 15, 25 0, 25, 50, 120, 250, 425	
	Total Alkalinity (as CaCO ₃)	0-240 mg/L	0, 40, 80, 120, 180, 240	
	pH	6.2-8.4	6.2, 6.8, 7.2, 7.8, 8.4 pH units	



Hach's single parameter test strips and test kits are listed alphabetically by test parameter name beginning on page 130. See our Test Kit Section pages 249-322 for a selection of our most popular water quality labs, application test kits, single-parameter test kits, and test strips.

How to Use the Parameters Section

Welcome to the REVISED, easy-to-use Parameters Section of the **2010-2011 Hach Master Catalog**. The next 70+ pages of this section contain Hach's high-quality reagents, test kits, and standards for use with Hach instruments. We've included 9 simple steps below to make your ordering experience easier than ever.

1. The parameters on the following pages are listed in alphabetical order.

EXAMPLE: Acidity is found on page 130, Zinc is on page 197.

2. Find your parameter of interest.

EXAMPLE: Chromium, Hexavalent

3. Consider whether you require an EPA approved or accepted method.

EXAMPLE: For the Chromium Reagent Set (Product No. 2242500) there is a "Yes" in the "EPA Compliant" column—therefore the method is EPA approved or accepted.

4. Determine the concentration range you need.

EXAMPLE: If most of your samples are expected to have a concentration between 0.1 and 0.5 mg/L, this would be the desirable concentration range.

5. Within the "Reagents" section for Chromium, find the range that best matches the concentration range you identified in step 4.

EXAMPLE: On page 149, the range of 0.010-0.700 mg/L is adequate for covering the range of 0.1-0.5 mg/L identified in Step 4.

6. Identify the Hach instrument needed for the analysis.

EXAMPLE: You have a DR 2800 spectrophotometer, so you can perform any of the products listed in the "Reagents" section, except Prod. No. 1206699. Generally, the DR 5000 performs the same methods as the DR/4000. The DR 2800 and DR 3800 generally run the same methods as the DR 2700, DR/2500, and the DR/2400. Older instruments (DR/2000, DR/2010, DR/3000) are listed where applicable.

If you require an all-inclusive portable system (reagents and instrument/color comparator), please visit the Test Kit section of the catalog beginning on page 249.

If you don't have an instrument and wish to purchase one, please see the Spectrophotometer and Colorimeter section of this catalog beginning on page 59.

7. Select your preferred reagent platform.

Hach has multiple reagent platforms to meet your testing demands. See the "Platform Key" at the bottom of each page to identify the different platforms. For a more detailed explanation of these options, see pages 124 and 126.

8. Standards and Accessories Required to Run Tests

The products listed in the "Standards" section are available for system calibrations and quality controls. The "Accessories Required to Run Tests" section lists products that may be required—please refer to the method for exact details.

9. When you are ready to place your order...

Go online to www.hach.com, call 1-800-227-4224 or 970-669-3050, or fax 970-669-2932.

Globally Harmonized System (GHS) Labels

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.

New GHS Hazard Symbols

Physical



Health



Symbols are a component of the hazard communication system and may have various meanings when combined with classification categories and warning statements. Future communications will provide more details concerning the new labeling system.

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)

NEW!



Example of New Label



How to Use the Parameters Section

Parameters

Chromate

Reagents

Description	Method	Platform	Range	# Tests	Product Number
DIGITAL TITRATOR TITRATION	8211				
Chromate Reagent Set		PP, DT	20-400 mg/L CrO ₄ ²⁻	100	2272400
Set includes:					
(1) Dissolved Oxygen 3 Powder Pillows		PP		100	98799
(2) Potassium Iodide Powder Pillows		PP		50	2059996
(1) Sodium Thiosulfate Titration Cartridge, 0.2068 N		DT		40-100	2267601
(1) Starch Indicator Solution, 100 mL		S		40-100	34932

Standards

Description	Volume	Concentration	Product Number
Chromium, Hexavalent Standard	100 mL	1,000 mg/L Cr ⁶⁺	1466442
Chromium, Hexavalent Standard	100 mL	50 mg/L Cr ⁶⁺	81042H

Accessories Required to Run Tests

Description	Product Number
Digital Titrator	1690001

Chromium, Hexavalent and Total

• Hexavalent Chromium method EPA accepted for wastewater analysis

• Rapid, accurate results

• Easily monitor total chromium for process control

EPA COMPLIANT
WHERE INDICATED

Reagents

Description	Method	Platform	Range	Instrument*	EPA Compliant	# Tests	Product Number
ChromaVer®3 Chromium Reagent PR, 10 mL	8023	PP	0.010-0.700 mg/L Cr ⁶⁺	except DR/3000, DR/2000, DR/850, DR/820	Yes	100 1,000	1271099 1271028
ChromaVer®3 Chromium AccuVac	8023	AV	0.010-0.700 mg/L Cr ⁶⁺	All except DR/850, DR/820	Yes	25	2505025
ChromaVer®3 Chromium Reagent PR, 25 mL	8023	PP	0-1.00 mg/L Cr ⁶⁺	DR/3000, DR/2000	Yes	100	1206699
Total Chromium Reagent Set	8024	PP	0.01-0.70 mg/L Cr	All except DR/850, DR/820, PC II		100	2242500
Set includes:							
(1) Acid Powder Pillows		PP				100	212699
(1) ChromaVer® 3 Chromium Powder Pillows		PP				100	1206699
(1) Chromium 1 Powder Pillows		PP				100	204399
(1) Chromium 2 Powder Pillows		PP				100	204499
Chromium, Hexavalent and Total TNTplus	10218 (Cr ⁶⁺) 10219 (T)	TNT+	0.03-1.00 mg/L Cr	DR 5000, DR 3800, DR 2800	Yes†	25	TNT854

*EPA equivalent for Cr⁶⁺ only.

Test Kits

Description	Method	Platform	Range	# Tests	Product Number
Chromium Test Kit, as Hexavalent Cr		CC	0.2-1.0 mg/L Cr ⁶⁺	50	1252700
Chromium Test Kit, as Hexavalent Cr (Model CH-8)		CD	0.1-1.5 mg/L Cr ⁶⁺	100	183400
Chromium Test Kit, as Hexavalent and Total Trivalent by difference (Model CH-12)		CD	0.1-1.5 mg/L Cr	50 (Cr ⁶⁺) 50 (Total)	222800
Pocket Colorimeter™ II – Chromium, Hexavalent	8023	PCII	0.01-0.70 mg/L Cr ⁶⁺	100	5870017
Chromium Test Kit, as Hexavalent Cr (Model CH-14)		DCT	5-100/ 50-1,000 mg/L	100	222702

†Generally, the DR 5000 performs the same methods as the DR/4000. The DR 2800 performs the same methods as the DR 2700, DR/2500, and DR/2400. Some exceptions do exist.

PLATFORM KEY: AV=AccuVac®; CC=Color Cube; CD=Color Disc; DCT=Drop Count Titration; DT=Digital Titrator; EX=Extraction; IA=Immunoassay; PCII=Pocket Colorimeter™ II; PP=Powder Pillows; RL=Rapid Liquid; S=Solution; SP=Solution Pillow; SW=Swift™; TNT=Test 'N Tube™; TNT+=TNTplus™; TRB=Turbidity; TS=Test Strip

Find it here... Buy it today on www.hach.com

U.S. customers only.

149

Parameters

This is the form in which the reagents are sold. For instance, PP stands for Powder Pillow, S stands for Solution, etc.—an acronym key is at the bottom of each page. See pages 124 and 126 for complete descriptions and comparisons of the different forms.

Identifies products as EPA Approved or Accepted.

This is a listing of the spectrophotometers and colorimeters that can perform the test.

You can also order individual products to replenish Reagent Sets.

Key to identify reagent platforms.

Continued on next page.

Reagents

Description	Method	Platform	Range	EPA Compliant	# Tests	Product Number
BURET TITRATION	8219 (MO) 8010 (P)		0-5,000 mg/L CaCO ₃ (MO); 0-10,000 mg/L CaCO ₃ (P)			
Bromphenol Blue Indicator Pillows		PP			100	1455099
Phenolphthalein Powder Pillows		PP			100	94299
Sodium Hydroxide Standard Solution 0.020N, 1 L		S		Yes†		19353
Water, Deionized (4L Bottle)		S				27256
DIGITAL TITRATOR TITRATION	8201 (MO) 8202 (P)					
Acidity Reagent Set (for Methyl Orange and Phenolphthalein Acidity) Set includes:		DT	10-160 mg/L CaCO ₃ ; 100-4,000 mg/L CaCO ₃		100	2272800
(1) Bromphenol Blue Indicator Pillows		PP			100	1455099
(1) Phenolphthalein Powder Pillows		PP			100	94299
(1) Sodium Hydroxide Titration Cartridge 0.1600N NaOH		DT	10-160 mg/L CaCO ₃	Yes†	40-100	1437701
(1) Sodium Hydroxide Titration Cartridge 1.600 N		DT	100-4,000 mg/L CaCO ₃	Yes†	40-100	1437901
Water, Deionized (4L Bottle)		S				27256
OPTIONAL REAGENTS						
Bromphenol Blue Indicator Solution, 100 mL MDB		S				1455232
Phenolphthalein Indicator Solution, 100 mL MDB		S				16232
Methyl Orange Indicator Solution, 100 mL MDB		S				14832

†Equivalent to 40 CFR 136.3 Standard Method 2310 B (4a)

Test Kits

Description	Platform	Range	# Tests	Product Number
P & Total (MO) as CaCO ₃ (Model AC-DT)	DT	10-4,000 mg/L CaCO ₃	100	2064000
Methyl-Orange (MO) & Phenolphthalein (P), LR Test Kit (Model AC-6)	DCT	5-100; 20-400 mg/L CaCO ₃	100	222301

Standards

Description	Volume	Concentration	Product Number
Sulfuric Acid, 0.500 N	100 mL	0.500 N	212132
Buffer Powder Pillows, 25/pk		pH 8.3	89868

Accessories Required to Run Tests

Description	Product Number
Digital Titrator	1690001
Buret, 25 mL, Class A	2636540

PLATFORM KEY: AV=AccuVac®; CC=Color Cube; CD=Color Disc; DCT=Drop Count Titration; DT=Digital Titrator; EX=Extraction; IA=Immunoassay; PCL=Pocket Colorimeter™ II; PP=Powder Pillows; RL=Rapid Liquid; S=Solution; SP=Solution Pillow; SW=SwiftTest™; TNT=Test 'N Tube™; TNT+=TNTplus™; TRB=Turbidity; TS=Test Strip



Reagents

Description	Method	Platform	Range	# Tests	Product Number
BURET TITRATION					
	8288 (Acid) 8289 (Base)				
Phenolphthalein Indicator Powder Pillows		PP	0-25,000 meq/L	100	94299
Water, Deionized (4 L Bottle)		S			27256
For acid measurement, pick one or more based on range, all are for a buret titration:					
Sodium Hydroxide Standard Solution, 0.020 N, 1 L		S	0-10 meq/L		19353
Sodium Hydroxide Standard Solution, 0.100 N, 1 L		S	10-100 meq/L		19153
Sodium Hydroxide Standard Solution, 1.000 N, 1 L		S	100-25,000 meq/L		104553
For base measurement, pick one or more based on range, all are for a buret titration:					
Sulfuric Acid Standard Solution, 0.020 N, 1 L		S	0-10 meq/L		20353
Sulfuric Acid Standard Solution, 0.030 N, 1 L		S	0-15 meq/L		2620553
Sulfuric Acid Standard Solution, 0.100 N, 1 L		S	10-100 meq/L		20253
Sulfuric Acid Standard Solution, 1.000 N, 1 L		S	100-25,000 meq/L		127053
DIGITAL TITRATOR TITRATION					
	8200 (Acid) 8233 (Base)				
Phenolphthalein Indicator Powder Pillows		DT, PP		100	94299
Water, Deionized (4 L Bottle)		S			27256
For acid measurement:					
Sodium Hydroxide Titration Cartridge, 1.600 N		DT	1-10 meq/L	40-100	1437901
Sodium Hydroxide Titration Cartridge, 8.00 N		DT	10-4,000 meq/L	40-100	1438101
For base measurement:					
Hydrochloric Acid Titration Cartridge, 8.00 N		DT	10-4,000 meq/L	40-100	1439001
Sulfuric Acid Titration Cartridge, 1.600 N		DT	1-10 meq/L	40-100	1438901
Sulfuric Acid Titration Cartridge, 8.00 N		DT	10-4,000 meq/L	40-100	1439101

Accessories Required to Run Tests

Description	Product Number
Digital Titrator	1690001
Buret, 25 mL, Class A	2636540

Standards

Description	Volume	Concentration	Product Number
Sodium Hydroxide Standard Solution	1 L	1.00 N	104553
Sulfuric Acid Standard Solution	1 L	1.00 N	127053

Alachlor

Reagents

Description	Method	Platform	Range	Instrument*	# Tests	Product Number
Alachlor in Water, Reagent Set	10202	IA	0.1, 0.5 ppb Thresholds	DR 5000, DR 3800, DR 2800 DR 2700, PC II	18	2813000

Test Kits

Description	Method	Platform	Range	# Tests	Product Number
Pocket Colorimeter™ II - Alachlor	10202	PCII	0.1-0.5 ppb thresholds	18	2812900

*Generally, the DR 5000 performs the same methods as the DR/4000. The DR 2800 performs the same methods as the DR 2700, DR/2500, and DR/2400. Some exceptions do exist.

PLATFORM KEY: AV=AccuVac®; CC=Color Cube; CD=Color Disc; DCT=Drop Count Titration; DT=Digital Titrator; EX=Extraction; IA=Immunoassay; PCII=Pocket Colorimeter™ II; PP=Powder Pillows; RL=Rapid Liquid; S=Solution; SP=Solution Pillow; SW=Swiftest™; TNT=Test 'N Tube™; TNT+=TNTplus™; TRB=Turbidity; TS=Test Strip

- Four reagent platforms to choose from (buret, digital titration, drop count, or test strips)
- EPA accepted buret methods
- Determines Phenolphthalein or Total Alkalinity
- Extended ranges meet your testing demands



Reagents

Description	Method	Platform	Range	Instrument*	EPA Compliant	# Tests	Product Number
BURET TITRATION							
	8221						
Bromcresol Green-Methyl Red Indicator		PP	0-5,000 mg/L CaCO ₃			100	94399
Phenolphthalein Indicator		PP	0-5,000 mg/L CaCO ₃			100	94299
Sulfuric Acid Standard Solution, 0.020 N (1 L Bottle)		S	0-5,000 mg/L CaCO ₃		Yes†		20353
Water, Deionized (4L Bottle)		S					27256
DIGITAL TITRATOR TITRATION							
	8203						
Alkalinity Reagent Set		DT	10-4,000 mg/L CaCO ₃			100	2271900
Set includes:							
(1) Bromcresol Green-Methyl Red Indicator		PP				100	94399
(1) Phenolphthalein Indicator		PP				100	94299
(1) Sulfuric Acid Titration Cartridge, 1.600 N		DT	100-4,000 mg/L CaCO ₃		Yes†	40-100	1438901
(1) Sulfuric Acid Titration Cartridge, 0.1600 N		DT	10-160 mg/L CaCO ₃		Yes†	40-100	1438801
Water, Deionized (4L Bottle)		S					27256
COLORIMETRIC							
Total Alkalinity TNTplus	10239	TNT+	25-400 mg/L CaCO ₃	DR 5000, DR 3800, DR 2800		25	TNT870

†Equivalent to 40 CFR 136.3 Standard Method 2320 B.

See pages 98-100 for
Hach Digital Titrator products.

Test Strips

Description	Platform	Range	# Tests	Product Number
Total Alkalinity Test Strip	TS	0-240 mg/L (ppm) (0, 40, 80, 120, 180, 240 steps)	50	2744850

Test Kits

Description	Platform	Range	# Tests	Product Number
P & Total (MO) as CaCO ₃ (Model AL-AP)	DCT, PP	0.4-8 gpg / 1-20 gpg**	100	2444300
P & Total (MO) as CaCO ₃ (Model AL-AP, MG-L)	DCT, PP	5-100 mg/L / 20-400 mg/L	100	2444301
P & Total (MO) as CaCO ₃ (Model AL-TA)	DCT, PP	23-495 gpg / 385-8500 mg/L	100	2314500
P & Total (MO) as CaCO ₃ (Model AL-DT)	DT, PP	10-4,000 mg/L CaCO ₃	100	2063700

**1 gpg = 17.1 mg/L (MO) = Methyl Orange

Standards

Description	Volume	Concentration	Product Number
Alkalinity Standard Solution	10 mL/ 16 Volumetric Ampoules	25,000 mg/L CaCO ₃ (0.5N)	1427810
Buffer Powder Pillow, 25/pk		pH 4.5	89568
Buffer Powder Pillow, 25/pk		pH 8.3	89868

Accessories Required to Run Tests

Description	Product Number
Digital Titrator	1690001
Delivery Tubes, straight with J hook	1720500
Buret, Class A, 25 mL	2636540
Buret, Class A, 50 mL	2636541

*Generally, the DR 5000 performs the same methods as the DR/4000. The DR 2800 performs the same methods as the DR 2700, DR/2500, and DR/2400. Some exceptions do exist.

PLATFORM KEY: AV=AccuVac®; CC=Color Cube; CD=Color Disc; DCT=Drop Count Titration; DT=Digital Titrator; EX=Extraction; IA=Immunoassay; PCIL=Pocket Colorimeter™ II; PP=Powder Pillows; RL=Rapid Liquid; S=Solution; SP=Solution Pillow; SW=SwiftTest™; TNT=Test 'N Tube™; TNT+=TNTplus™; TRB=Turbidity; TS=Test Strip



- Photometric determination of low levels of Aluminum

- 3 Methods:
 - Aluminon, highest range
 - Chromazurol S, mid range
 - Eriochrome Cyanine R (ECR), low range

Reagents

Description	Method	Platform	Range	Instrument*	# Tests	Product Number
Aluminum TNTplus, Chromazurol S	10215	TNT+	0.02-0.50 mg/L Al	DR 5000, DR 3800, DR 2800	24	TNT848
Aluminum Reagent Set, ECR 10mL	8326	PP, S	0.002-0.250 mg/L Al	DR 5000, DR 3800, DR 2800, DR 2700, DR/2010	100	2603700
Set Includes:						
(1) ECR Reagent Powder Pillows		PP			100	2603849
(1) Hexamethylenetetramine Buffer Powder Pillows		PP			100	2603999
(1) ECR Masking Reagent Solution, 25 mL		S			100	2380123
Aluminum Reagent Set, ECR 25 mL	8326	PP, S	0-0.220 mg/L Al	DR/3000, DR/2000	100	2443400
Set Includes:						
(4) ECR Reagent Powder Pillows		PP			25	2380268
(2) Hexamethylenetetramine Powder Pillows		PP			50	187866
(1) ECR Masking Reagent Solution, 25 mL		S			100	2380123
Aluminum Reagent Set, Aluminon	8012	PP	0.008-0.800 mg/L Al	All	100	2242000
Set Includes:						
(1) AluVer® 3 Aluminum Powder Pillows		PP			100	1429099
(1) Ascorbic Acid Powder Pillows		PP			100	1457799
(1) Bleaching 3 Powder Pillows		PP			100	1429449

Test Kits

Description	Method	Platform	Range		# Tests	Product Number
Pocket Colorimeter™ II - Aluminum	8012	PCII, PP	0.01-0.80 mg/L Al	Kit includes PC II	100	5870025

Standards

Description	Volume	Concentration	Product Number
Aluminum Standard Solution	100 mL	10 mg/L Al	2305842
Aluminum Standard Solution	10 mL/16 Voluette Ampoules	50 mg/L Al	1479210
Aluminum Standard Solution	100 mL	100 mg/L Al	1417442

Accessories Required to Run Tests

Description	Product Number
Sample Blank Vials for TNTplus, 5/pk	TNT919



*Generally, the DR 5000 performs the same methods as the DR/4000. The DR 2800 performs the same methods as the DR 2700, DR/2500, and DR/2400. Some exceptions do exist.

PLATFORM KEY: AV=AccuVac®; CC=Color Cube; CD=Color Disc; DCT=Drop Count Titration; DT=Digital Titration; EX=Extraction; IA=Immunoassay; PCII=Pocket Colorimeter™ II; PP=Powder Pillows; RL=Rapid Liquid; S=Solution; SP=Solution Pillow; SW=SwiftTest™; TNT=Test 'N Tube™; TNT+=TNTplus™; TRB=Turbidity; TS=Test Strip

Hach's complete line of Ammonia methods (Nessler and Salicylate) provides the right choice for your application.

- Multiple methods and reagent platforms available
- Nessler method is EPA accepted
- Salicylate ammonia tests are mercury-free

- All new TNTplus methods are barcoded for automatic method detection
- ISE also available, see page 47



Reagents

Description	Method	Platform	Range	Instrument*	EPA Compliant	# Tests	Product Number
Ammonia Reagent Set , Salicylate, 10 mL Set includes two of each: (1) Ammonia Salicylate Powder Pillows (1) Ammonia Cyanurate Powder Pillows Water, Deionized (4L Bottle)	8155	PP PP PP S	0.01-0.50 mg/L NH ₃ -N	All except DR/4000, DR/3000, DR/2000, DR/820		100 100 100	2668000 2653299 2653199 27256
Ammonia Reagent Set , Salicylate, 25 mL Set includes: (4) Ammonia Salicylate Powder Pillows (4) Ammonia Cyanurate Powder Pillows Water, Deionized (4L Bottle)	8155	PP PP PP S	0.01-0.50 mg/L NH ₃ -N	DR/4000, DR/3000, DR/2000		100 25 25	2243700 2395366 2395566 27256
Ammonia Reagent Set , Nessler Set includes: (1) Nessler Reagent, 500 mL (1) Mineral Stabilizer, 50 mL (1) Polyvinyl Alcohol Dispersing Agent, 50 mL Water, Deionized (4L Bottle)	8038	S S S S	0.02-2.50 mg/L NH ₃ -N	All except DR/800 Series, PC II	Yes [†]	250 250 250	2458200 2119449 2376626 2376526 27256
Ammonia Reagent Set , AmVer (Salicylate), LR	10023	TNT	0.02-2.50 mg/L NH ₃ -N	DR 5000, DR 3800, DR 2800, DR 2700, DR/890, DR/850		25-50 [‡]	2604545
Ammonia Reagent Set , AmVer (Salicylate), HR	10031	TNT	0.4-50.0 mg/L NH ₃ -N	DR 5000, DR 3800, DR 2800, DR 2700, DR/890, DR/850		25-50 [‡]	2606945
Ammonia TNTplus™, ULR	10205	TNT+	0.015-2.00 mg/L NH ₃ -N	DR 5000, DR 3800, DR 2800	Yes	25	TNT830
Ammonia TNTplus™, LR	10205	TNT+	1-12 mg/L NH ₃ -N	DR 5000, DR 3800, DR 2800	Yes	25	TNT831
Ammonia TNTplus™, HR	10205	TNT+	2-47 mg/L NH ₃ -N	DR 5000, DR 3800, DR 2800	Yes	25	TNT832

LACHAT INSTRUMENT REAGENTS

Ammonia Reagent Set Please contact Technical Support for determination of method and range.	Lachat QuikChem® 8500 System	500	52904
---	------------------------------	-----	--------------

[†]Distillation required.

[‡]Dependent on the number of performed reagent blanks.

For control of biological nutrient removal, see Reagent Sets under Nutrients on page 177.

Test Strips

Description	Platform	Range	# Tests	Product Number
Ammonia Test Strip	TS	0-6 mg/L NH ₃ -N (0, 0.25, 0.5, 1, 3, 6 steps)	25	2755325

Test Kits

Description	Method	Platform	Range	Instrument*	# Tests	Product Number
Pocket Colorimeter™ II - Ammonia	8155	PCII, PP	0.01-0.80 mg/L NH ₃ -N	Kit includes PC II	100	5870040
Nitrogen Ammonia Test Kit (Model NI-SA)		CD	0-2.5 mg/L NH ₃ -N		100	2428700
Nitrogen Ammonia Test Kit, For Freshwater (Model NI-8)		CD	0-3.0 mg/L NH ₃ -N		100	224100
Ammonia Low Range Test Kit for Freshwater		CC	0-0.8 mg/L NH ₃ -N		25	2266900
Ammonia Mid Range Test Kit for Freshwater		CC	0-2.5 mg/L NH ₃ -N		25	1252400

For on-line ammonia analyzers see pages 401-402.

*Generally, the DR 5000 performs the same methods as the DR/4000. The DR 2800 performs the same methods as the DR 2700, DR/2500, and DR/2400. Some exceptions do exist.



Standards

Description	Volume	Concentration	Product Number
Ammonia Standard Solution as NH ₃ -N (NIST)	500 mL	1 mg/L NH ₃ -N	189149
Ammonia Nitrogen Standard Solution	500 mL	10 mg/L NH ₃ -N	15349
Ammonia Standard Solution as NH ₃ -N (NIST)	10 mL/16 Volute Ampules	50 mg/L NH ₃ -N	1479110
Ammonia Standard Solution	2 mL/20 PourRite Ampules	50 mg/L NH ₃ -N	1479120
Ammonia Standard Solution as NH ₃ -N	500 mL	100 mg/L NH ₃ -N	2406549
Ammonia Standard Solution as NH ₃ -N (NIST)	10 mL/16 Volute Ampules	150 mg/L NH ₃ -N	2128410
Ammonia Standard Solution	10 mL/16 Volute Ampules	160 mg/L NH ₃ -N	2109110
Ammonia Standard Solution	1 L	1,000 mg/L NH ₃ -N	2354153
Wastewater Influent Inorganics, Mixed Parameter QC Standard; (Ammonia, Nitrate, Phosphate, COD, Sulfate, TOC)	500 mL	Ammonia-15 mg/L NH ₃ -N; Nitrate-10 mg/L NO ₃ -N; Phosphate-10 mg/L PO ₄ ³⁻ ; COD-500 mg/L COD; Sulfate-400 mg/L SO ₄ ²⁻ ; TOC-161 mg/L TOC	2833149
Wastewater Effluent Inorganics, Mixed Parameter QC Standard; (Ammonia, Nitrate, Phosphate, COD, Sulfate, TOC)	500 mL	Ammonia- 2 mg/L NH ₃ -N; Nitrate- 4 mg/L NO ₃ -N; Phosphate- 2 mg/L PO ₄ ³⁻ ; COD- 25 mg/L COD; Sulfate- 50 mg/L SO ₄ ²⁻ ; TOC- 8 mg/L TOC	2833249

Ammonia, Free

- Fast method
- Increased accuracy

- Extended range
- Ideal for identifying nitrification excursions

- Available on Hach Spectrophotometers and Colorimeters for versatile use in field and lab environments

Reagents

Description	Method	Platform	Range	Instrument*	# Tests	Product Number
Free Ammonia Reagent Set Set includes: (1) Free Ammonia Reagent Solution (1) Monochlor F Powder Pillows	10200	PP, S	0.02-0.50 mg/L NH ₃ -N	All except DR/820	50	2879700
		S			50	2877336
		PP			50	2802299
Free Ammonia Reagent Set Set includes: same as above (5 each)	10200	PP, S	0.02-0.50 mg/L NH ₃ -N	All except DR/820	250	2879701
Free Ammonia Reagent Set Starter Kit Includes reagents, sample cells, and instructions.		PP, S	0.02 to 0.50 mg/L NH ₃ -N	DR 5000, DR/4000, DR/2010, DR/890, DR/850	50	2879704
Free Ammonia Reagent Set Starter Kit Includes reagents, sample cells, and instructions.		PP, S	0.02 to 0.50 mg/L NH ₃ -N	DR 3800, DR 2800, DR 2700, DR/2500, DR/2400	50	2879705

For controlling drinking water distribution systems, see products for determining Nitrite (p. 175) and Trihalomethanes (pp. 195-196).

Standards

Description	Volume	Concentration	Product Number
Monochloramine/Free Ammonia Spec✓ Secondary Standard Kit	Set of 4 vials	0.04 – 4.50 mg/L Cl ₂ 0.01 – 0.50 mg/L NH ₃ -N	2507500

For on-line monochloramine see page 428.

Continued on next page.

*Generally, the DR 5000 performs the same methods as the DR/4000. The DR 2800 performs the same methods as the DR 2700, DR/2500, and DR/2400. Some exceptions do exist.

PLATFORM KEY: AV=AccuVac®; CC=Color Cube; CD=Color Disc; DCT=Drop Count Titration; DT=Digital Titrator; EX=Extraction; IA=Immunoassay; PCL=Pocket Colorimeter™ II; PP=Powder Pillows; RL=Rapid Liquid; S=Solution; SP=Solution Pillow; SW=Swiftest™; TNT=Test 'N Tube™; TNT+=TNTplus™; TRB=Turbidity; TS=Test Strip

Tests Kits

Description	Method	Platform	Range		# Tests	Product Number
Pocket Colorimeter™ II Test Kit – Free Ammonia & Monochloramine	10200	PP, S	0.02-0.50 mg/L NH ₃ -N 0.04-4.50 mg/L Cl ₂	Kit includes PC II	50 Free Ammonia or 100 Monochloramine	5870026
Nitrification Control Kit Contains tests for: Free Ammonia Monochloramine Nitrite Total Chlorine, LR Total Chlorine, HR		PP, S		Kit includes DR/890 + Sample Cell		2882200
			0.02-0.50 mg/L NH ₃ -N		50	
			0.0-4.50 mg/L Cl ₂		100	
			0-0.350 mg/L NO ₂ ⁻ -N		100	
			0-2.00 mg/L Cl ₂		100	
			0.1-10.0 mg/L Cl ₂		100	

Aqua Ammonia / HR Ammonium Hydroxide

- Measure Aqua Ammonia concentrations in delivered bulk solutions
- Portable system for control at chloramination facilities

Reagents

Description	Method	Platform	Range	# Tests	Product Number
DIGITAL TITRATOR TITRATION	10222				
Aqua Ammonia Reagent Set Set includes: Sulfuric Acid Titration Cartridge, 8.00 N Wide Range 4 pH Indicator, 100 mL		DT	5-35% = 50-350 g/L NH ₃	100	2930500
		DT			1439101
		S			2329332

Test Kits

Description	Platform	Range	# Tests	Product Number
Aqua Ammonia DT Test Kit (Model NI-HRDT)	DT	5-35% = 50-350 g/L NH ₃	100	2930400



Aqua Ammonia Test Kit
Prod. No. 2930400

Accessories Required to Run Lab Test

Description	Product Number
Digital Titrator	1690001

Standards

Description	Volume	Concentration	Product Number
Ammonium Hydroxide Solution, 10%	500 mL	10%	1473649

To monitor the assay of chlorine solutions, see Hypochlorite on page 165.

PLATFORM KEY: AV=AccuVac®; CC=Color Cube; CD=Color Disc; DCT=Drop Count Titration; DT=Digital Titrator; EX=Extraction; IA=Immunoassay; PCII=Pocket Colorimeter™ II; PP=Powder Pillows; RL=Rapid Liquid; S=Solution; SP=Solution Pillow; SW=SwiftTest™; TNT=Test 'N Tube™; TNT+=TNTplus™; TRB=Turbidity; TS=Test Strip

Reagents

Description	Method	Platform	Range	Instrument*	EPA Compliant Yes	# Tests varies	Product Number
SILVER DIETHYDITHIOCARBAMATE LAB METHOD Distillation required.	8013		0-0.200 mg/L As	All except DR/800, PC II			
Arsenic Standard Solution, 100 mL, 1,000 mg/L As		S					1457142
Hydrochloric Acid, ACS, 500 mL		S					13449
Lead Acetate Solution, 10%, 100 mL		S					1458042
Potassium Iodide Solution, 20%, 100 mL		S					1456842
Pyridine, ACS, 500 mL		S					1446949
Silver Diethyldithiocarbamate, 25 g		Jar					1447624
Stannous Chloride Solution, 100 mL		S					1456942
Water, Deionized (4L Bottle)		S					27256
Zinc, 20-mesh, ACS, 454 g		Jar					79501



- Portable method, ideal for field use
- Method eliminates interference from sulfide
- Specially designed cap eliminates exposure to arsine gas
- Includes two reaction vessels for simultaneous testing

Test Kits

Description	Platform	Range	# Tests	Product Number
Arsenic, Low Range Test Kit	TS	0-500 ppb As (0, 10, 30, 50, 70, 300, 500 steps)	100	2800000
EZ Arsenic, High Range Test Kit	TS	0-500 ppb As (0, 10, 25, 50, 100, 250, 500 steps) 0-4,000 ppb As (0, 35, 75, 175, 1500, 4000 steps)	100	2822800

Accessories Required to Run Lab Test

Description	Product Number
Distillation Apparatus, Arsenic Accessories AND	2265400
Distillation Apparatus, General Purpose Accessories AND EITHER	2265300
Distillation Apparatus Heater, 115 Vac, 60 Hz OR	2274400
Distillation Apparatus Heater, 230 Vac, 50 Hz	2274402

See Procedure for additional common labware required for this test.

Ascorbic Acid

Tests Kits

Description	Platform	Range	# Tests	Product Number
Ascorbic Acid Test Kit (Model ASC-1)	DCT	10-200 mg/L Ascorbic Acid	100	2308100

*Generally, the DR 5000 performs the same methods as the DR/4000. The DR 2800 performs the same methods as the DR 2700, DR/2500, and DR/2400. Some exceptions do exist.

PLATFORM KEY: AV=AccuVac®; CC=Color Cube; CD=Color Disc; DCT=Drop Count Titration; DT=Digital Titration; EX=Extraction; IA=Immunoassay; PCII=Pocket Colorimeter™ II; PP=Powder Pillows;
RL=Rapid Liquid; S=Solution; SP=Solution Pillow; SW=SwiftTest™; TNT=Test 'N Tube™; TNT+=TNTplus™; TRB=Turbidity; TS=Test Strip

Atrazine

Reagents

Description	Method	Platform	Range	Instrument*	# Tests	Product Number
Atrazine Reagent Set	10050	IA	0.1, 0.5, 3.0 ppb thresholds	All except DR/800 Series	18	2762700

Test Kits

Description	Method	Platform	Range		# Tests	Product Number
Atrazine Pocket Colorimeter II Test Kit	10050	IA	0.1, 0.5, 3.0 ppb thresholds	Kit includes PC II	18	2763500

Barium

Reagents

Description	Method	Platform	Range	Instrument*	# Tests	Product Number
BariVer® 4 Barium Reagent Powder Pillows	8014	PP	2-100 mg/L Ba	All except DR/3000, DR/800, PC II	100	1206499

Standards

Description	Volume	Concentration	Product Number
Barium Standard Solution as Ba (NIST)	100 mL	1,000 mg/L Ba	1461142

Benzotriazole / Tolyltriazole

Reagents

Description	Method	Platform	Range	Instrument*	# Tests	Product Number
Triazole Reagent Pillows	8079	PP	1.0-16.0 mg/L Benzotriazole 1.0-20.0 mg/L Tolyltriazole	All except PC II, DR/850, DR820	100	2141299

Test Kits

Description	Platform	Range	# Tests	Product Number
Triazole Test Kit (Model TZ-1), 115V	CD	0.5-15.0 mg/L Benzotriazole or Tolyltriazole	50	2167500
Triazole Test Kit (Model TZ-1), 230V	CD	0.5-15.0 mg/L Benzotriazole or Tolyltriazole	50	2167502
Triazole Test Kit (Model TZ-1) without lamp or power supply	CD	0.5-15.0 mg/L Benzotriazole or Tolyltriazole	50	2167570

Standards

Description	Volume	Concentration	Product Number
Benzotriazole Standard Solution	100 mL	500 mg/L	2141342

*Generally, the DR 5000 performs the same methods as the DR/4000. The DR 2800 performs the same methods as the DR 2700, DR/2500, and DR/2400. Some exceptions do exist.

PLATFORM KEY: AV=AccuVac®; CC=Color Cube; CD=Color Disc; DCT=Drop Count Titration; DT=Digital Titrator; EX=Extraction; IA=Immunoassay; PCII=Pocket Colorimeter™ II; PP=Powder Pillows; RL=Rapid Liquid; S=Solution; SP=Solution Pillow; SW=SwiftTest™; TNT=Test 'N Tube™; TNT+=TNTplus™; TRB=Turbidity; TS=Test Strip



Accessories Required to Run Tests

Description	Product Number
UV Lamp Kit, 115V	2082800
UV Lamp Kit, 220V	2082802
UV Safety Goggles (Included with lamp kit.)	2113400

BOD (Biochemical Oxygen Demand)

- Dilution method requires measurement of Dissolved Oxygen. See page 100 for titration reagents and pages 24-47 for electrochemical meters & probes
- Complete line of products for BOD preparation
- Prepackaged nutrient buffer
- Convenient, easy-to-use, pre-measured products

Reagents

Description	Method	# Tests	Product Number
DILUTION METHOD	8043		
Nitrification inhibitor - 35 g (Nitrification Inhibitor for CBOD Determination)		200	253335
Bottle Cap Dispenser, 1/pk (Used with 35 g bottle.)			45901
Nitrification Inhibitor - 500 g (Nitrification Inhibitor for CBOD Determination)		2500	253334
BOD Seed Inoculum, 50 capsules, POLYSEED®			2918700
FOR DILUTION WATER PREPARATION			
Nutrient Buffer Pillows, 0.5-mL size for 300 mL, 50/pk			1416066
Nutrient Buffer Pillows, 3-mL size for 3 liters, 50/pk			1486166
Nutrient Buffer Pillows, 4-mL size for 4 liters, 50/pk			2436466
Nutrient Buffer Pillows, 6-mL size for 6 liters, 50/pk			1486266
Nutrient Buffer Pillows, 19-mL size for 19 liters, 25/pk			1486398
<i>Reagents are packaged to the specifications in EPA-approved (405.1) Standard Method 5210B.</i>			
BODTRAK RESPIROMETRIC METHOD 10099	10099		
Lithium Hydroxide Powder Pillows, 100/pk			1416369
Stopcock Grease, 75 grams			56275

Standards

Description	Volume	Concentration	Product Number
ez GGA pre-measured Glucose plus Glutamic Acid (Dilution Method)	2mL/20 ez GGA Ampules	Equivalent to 150 mg/L GGA for the BOD5 test (198 mg/L BOD)	2514420
Glucose plus Glutamic Acid (Dilution Method)	10 mL/ 16 Voluette Ampules	300 mg/L each (Glucose plus Glutamic Acid)	1486510
Glucose plus Glutamic Acid (Respirometric Method)	10 mL/ 16 Voluette Ampules	3,000 mg/L each (Glucose plus Glutamic Acid)	1486610
Oxygen Demand, Mixed Parameter QC Standard; (BOD, COD, TOC)	10 mL/ 16 Voluette Ampules	BOD - 396 mg/L BOD, COD - 617 mg/L COD, TOC - 242 mg/L TOC	2833510

Accessories Required to Run Tests *Methods require other miscellaneous labware—please reference Method for complete list.*

Description	Method	Product Number
DILUTION METHOD	8043	
BOD Bottle Cap, 6/pk		241906
Bottle, BOD, Disposable, 300 mL, 117/case		2943100
Bottle Stopper, acrylic, 25/pk		2943900
Bottle, glass-stoppered, 300 mL, 6/pk		62106
Incubator, BOD (110V)		2616200
RESPIROMETRIC METHOD	10099	
Incubator, BOD (110V)		2616200

Boron

Reagents

Description	Method	Platform	Range	Instrument*	# Tests	Product Number
BORON, CARMINE METHOD	8015	PP, S	0.2-14.0 mg/L B	All except DR/800, PC II		
BoroVer®3 Boron Reagent Powder Pillows	PP				100	1417099
Sulfuric Acid, ACS (2.5 L Bottle)	S					97909
Water, Deionized (4L Bottle)	S					27256

Standards

Description	Volume	Concentration	Product Number
Boron Standard Solution	100 mL	1,000 mg/L B	191442

Bromine

Reagents

Description	Method	Platform	Range	Instrument*	# Tests	Product Number
DPD METHOD	8016					
DPD Total Chlorine Reagent AccuVac Ampules		AV	0.05-4.50 mg/L Br ₂	All	25	2503025
DPD Total Chlorine Reagent Powder Pillows, 10 mL		PP	0.05-4.50 mg/L Br ₂	All except DR/3000, DR/2000	100	2105669
DPD Total Chlorine Reagent Powder Pillows, 25 mL		PP	0.05-4.50 mg/L Br ₂	DR/3000, DR/2000	100	1406499

Test Kits

Description	Method	Platform	Range	Instrument*	# Tests	Product Number
Pocket Colorimeter™ II Test Kit – Bromine	8016	PCII	0.05-4.50 / 0.2-10.0 mg/L Br ₂	Kit includes PC II	50	5870001
Bromine Test Kit (Model L-P Cube)		CC	0.6-3.0 mg/L Br ₂		50	2194000

Cadmium

Reagents

Description	Method	Platform	Range	Instrument*	# Tests	Product Number
Cadmium Reagent Set	8017	PP, S	0.7-80 µg/L Cd	All except DR/800, PC II	60-100	2242200
Set includes:						
(1) Citrate Buffer Powder Pillows		PP			100	1420299
(1) Chloroform ACS, 4 L		S			60-100	1445817
(1) DithiVer Reagent Powder Pillows		PP			100	1261699
(1) Potassium Cyanide, ACS, 125g		Jar			100	76714
(4) Sodium Hydroxide, 50%, 500 mL		S			25	218049
(1) Cotton Balls, pk/100					100	257201
Cadmium Reagent Set, Air Freight Configuration (Chloroform is packaged to meet air freight regulations.)					60-100	2242201
Digestion is required to determine total cadmium.						
Cadmium TNTplus™	10217	TNT+	0.02-0.30 mg/L Cd	DR 5000, DR 3800, DR 2800	25	TNT852
Test determines soluble metals.						
Add Metals Prep Set TNT890 to determine total Cadmium metal.						See next page.
Add Calcium Separation Set TNT892 for Cadmium sample matrices containing more than 50 mg/L Calcium or Magnesium.						See next page.

*Generally, the DR 5000 performs the same methods as the DR/4000. The DR 2800 performs the same methods as the DR 2700, DR/2500, and DR/2400. Some exceptions do exist.

PLATFORM KEY: AV=AccuVac®; CC=Color Cube; CD=Color Disc; DCT=Drop Count Titration; DT=Digital Titrator; EX=Extraction; IA=Immunoassay; PCII=Pocket Colorimeter™ II; PP=Powder Pillows; RL=Rapid Liquid; S=Solution; SP=Solution Pillow; SW=SwiftTest™; TNT=Test 'N Tube™; TNT+=TNTplus™; TRB=Turbidity; TS=Test Strip



Standards

Description	Volume	Concentration	Product Number
Cadmium Standard Solution	100 mL	100 mg/L Cd	1402442

Accessories Required to Run TNTplus Cadmium Tests

Description	Product Number
Calcium Separation Set for 25 Calcium separations (Only needed when Ca^{2+} and/or $\text{Mg}^{2+} > 50$ mg/L)	TNT892
Metals Prep Set for Cadmium (Prod. No. TNT852), 25/pk	TNT890
Reaction Tubes, 20 mm, 5/pk	LZP065

Calcium Hardness

Reagents

Also see Hardness on pages 161-163.

Description	Method	Platform	Range	EPA Compliant	# Tests	Product Number
BURET TITRATION						
Calcium Hardness Reagent Set (Low Range)	8222	PP, S	0-5,000 mg/ L CaCO_3	Yes	100	2447000
Set includes:						
(1) Potassium Hydroxide, 8 N, 100 mL		S			100	28232H
(1) CalVer 2 Powder Pillows		PP			100	85299
(1) TitraVer EDTA Hardness Titrant, 0.020 N, 1L		S	0-5,000 mg/ L CaCO_3	Yes	40-100	20553
TitraVer EDTA Hardness Titrant, 0.200 N, 500 mL (HR)		S	1000-25,000 mg/L CaCO_3			102149
Water, Deionized (4L Bottle)		S				27256
DIGITAL TITRATOR TITRATION						
Calcium Hardness Reagent Set (Low Range)	8204	DT	10-160 mg/L CaCO_3		100	2447200
Set includes:						
(1) 0.0800 M TitraVer EDTA Cartridge		DT	10-160 mg/L CaCO_3		40-100	1436401
(2) Potassium Hydroxide, 8 N, 100 mL		S			100	28232H
(1) CalVer 2 Powder Pillows		PP			100	85299
Calcium Hardness Reagents (Low Range)	8204	DT	1-16 G.d.h. CaCO_3^\dagger		40-100	1496001
0.1428 M TitraVer EDTA Cartridge		DT			100	28232H
Potassium Hydroxide, 8 N, 100 mL		S			100	85299
CalVer 2 Powder Pillows		PP			100	85299
Calcium Hardness Reagent Set (High Range)	8204	DT	100-4,000 mg/L CaCO_3		100	2447500
Set includes:						
(1) 0.800 M TitraVer EDTA Cartridge		DT	100-4,000 mg/L CaCO_3		40-100	1439901
(2) Potassium Hydroxide, 8 N, 100 mL		S			100	28232H
(1) CalVer 2 Powder Pillows		PP			100	85299
Calcium Hardness Reagents (High Range)	8204	DT	10-100+ G.d.h. CaCO_3^\dagger		40-100	1495901
0.714 M TitraVer EDTA Cartridge		DT			100	28232H
Potassium Hydroxide, 8 N, 100 mL		S			100	85299
CalVer 2 Powder Pillows		PP			100	85299
Water, Deionized (4L Bottle)		S				27256

 † G.d.h. = German degree hardness; 1 German degree hardness equals 17.9 mg/L CaCO_3

See pages 98-100 for
Hach Digital Titrator products.

Test Strips

Description	Platform	Range	# Tests	Product Number
Hardness Test Strips, Total (as CaCO_3)	TS	0-425 ppm, 0-25 gpg CaCO_3 (0, 25, 50, 120, 250, 425 steps)	1,000 †	2793828
Hardness Test Strips, Total (as CaCO_3)	TS	0-425 ppm, 0-25 gpg CaCO_3 (0, 25, 50, 120, 250, 425 steps)	250 †	2793844
Hardness Test Strips, Total (as CaCO_3)	TS	0-425 ppm, 0-25 gpg CaCO_3 (0, 25, 50, 120, 250, 425 steps)	50	2745250

 † Individually wrapped.

Continued on next page.

Calcium Hardness

Also see Hardness on pages 161-163.

Standards

Description	Volume	Concentration	Product Number
Calcium Standard Solution	10 mL/16 Volumetric Ampoules	10,000 mg/L CaCO ₃	218710
Calcium Chloride Standard Solution	1 L	1,000 mg/L CaCO ₃	12153

Accessories Required to Run Tests

Description	Product Number
Digital Titrator	1690001
Buret, Class A, 25-mL	2636540

Carbon Dioxide

Reagents

Description	Method	Platform	Range	# Tests	Product Number
BURET TITRATION	8233				
Phenolphthalein Powder Pillows		PP	0-250 mg/L CO ₂	100	94299
Sodium Hydroxide Standard Solution, 0.0227 N (1 L)		S	0-250 mg/L CO ₂		19253
DIGITAL TITRATOR TITRATION	8205				
Carbon Dioxide Reagent Set, Full Range Set includes:		DT	10-1000 mg/L CO ₂	100	2272700
(1) Phenolphthalein Powder Pillows		PP		100	94299
(1) Sodium Hydroxide Titration Cartridge, 0.3636 N		DT		40-100	1437801
(1) Sodium Hydroxide Titration Cartridge, 3.636 N		DT		40-100	1438001
Carbon Dioxide Reagents, LR		DT	10-100 mg/L CO ₂		
Phenolphthalein Powder Pillows		PP		100	94299
Sodium Hydroxide Titration Cartridge, 0.3636 N		DT		100	1437801
OPTIONAL REAGENTS					
Phenolphthalein Indicator Solution, 100 mL MDB		S			16232

Test Kits

Description	Platform	Range	# Tests	Product Number
Carbon Dioxide Test Kit (Model CA-23)	DCT	1.25-100 mg/L CO ₂ [†]		143601
Carbon Dioxide Test Kit (Model CA-DT)	DT	10-1,000 mg/L CO ₂		2064100

[†]Three ranges available: 1.25-25 mg/L; 2-40 mg/L; 5-100 mg/L

Standards

Description	Volume	Concentration	Product Number
Carbon Dioxide Standard Solution (KHP)	10 mL/16 Volumetric Ampoules	10,000 mg/L CO ₂	1427510
Carbon Dioxide Standard Solution	100 mL	100 mg/L CO ₂	226142

Accessories Required to Run Tests

Description	Product Number
Buret, Class A 25-mL	2636540
Digital Titrator	1690001

PLATFORM KEY: AV=AccuVac®; CC=Color Cube; CD=Color Disc; DCT=Drop Count Titration; DT=Digital Titrator; EX=Extraction; IA=Immunoassay; PCL=Pocket Colorimeter™ II; PP=Powder Pillows; RL=Rapid Liquid; S=Solution; SP=Solution Pillow; SW=Swiftest™; TNT=Test 'N Tube™; TNT+=TNTplus™; TRB=Turbidity; TS=Test Strip



Reagents

Description	Method	Platform	Range	# Tests	Product Number
FREE CHELANT--DIGITAL TITRATOR TITRATION	8352		0-20.0 mg/L CaCO ₃		
Buffer Solution, Hardness 1, 100 mL MDB		S		50	42432
ManVer 2 Hardness Indicator Powder Pillows		PP		100	85199
Magnesium Chloride Titration Cartridge, 0.0800 M		DT		40-100	2062501
OPTIONAL REAGENTS					
Hardness 2 Indicator Solution, 100 mL MDB		S		~300	42532
TOTAL CHELANT--DIGITAL TITRATOR TITRATION	8350		0-40.0 mg/L Na ₄ EDTA		
Ascorbic Acid Powder Pillows		PP		100	1457799
Bismuth Nitrate Titration Cartridge, 0.0200 M		DT		40-100	2434501
Methylthymol Blue Indicator Powder Pillows		PP		100	2284799
Sulfuric Acid Standard Solution, 5.25 N, 100 mL		S		100	244932

Accessories Required to Run Tests

Description	Product Number
Digital Titrator	1690001

Chloramine, Mono

See Monochloramine on pages 171-172.

Chloride

Reagents

Description	Method	Platform	Range	Instrument*	EPA Compliant	# Tests	Product Number
MERCURIC THIOCYANATE COLORIMETRIC METHOD	8113						
Chloride Reagent Set (Mercuric Thiocyanate)		S	0.1-25.0 mg/L Cl ⁻	All except DR/800, PC II		100	2319800
Set Includes:							
(1) Ferric Ion Solution, 100 mL		S				100	2212242
(1) Mercuric Thiocyanate Solution, 200 mL		S				100	2212129
Water, Deionized (4L Bottle)		S					27256
MERCURIC NITRATE DIGITAL TITRATOR TITRATION	8206						
Mercuric Nitrate Chloride Reagent Set		DT	10-8,000 mg/L Cl ⁻			100	2272600
Set Includes:							
(1) Diphenylcarbazone Powder Pillows		PP				100	83699
(1) Mercuric Nitrate Titration Cartridge, 0.2256 N		DT			Yes	40-100	1439301
(1) Mercuric Nitrate Titration Cartridge, 2.256 N		DT			Yes	40-100	92101
Water, Deionized (4L Bottle)		S					27256
SILVER NITRATE DIGITAL TITRATOR TITRATION	8207						
Silver Nitrate Chloride Reagent Set, Low Range		DT	10-100 mg/L Cl ⁻			100	2444100
Set Includes:							
(2) Chloride 2 Indicator Powder Pillows		PP				50	105766
(2) Silver Nitrate Titration Cartridge, 0.2256 N		DT				40-100	1439601
Silver Nitrate Chloride Reagent Set, High Range		DT	100-10,000 mg/L Cl ⁻			100	2444200
Set Includes:							
(2) Chloride 2 Indicator Powder Pillows		PP				50	105766
(2) Silver Nitrate Titration Cartridge, 1.128 N		DT				40-100	1439701
Silver Nitrate Chloride Reagent Set, Full Range		DT	10-10,000 mg/L Cl ⁻			100	2288000
Set Includes:							
(2) Chloride 2 Indicator Powder Pillows		PP				50	105766
(1) Silver Nitrate Titration Cartridge, 0.2256 N		DT				40-100	1439601
(1) Silver Nitrate Titration Cartridge, 1.128 N		DT				40-100	1439701
Water, Deionized (4L Bottle)		S					27256

Continued on next page.

*Generally, the DR 5000 performs the same methods as the DR/4000. The DR 2800 performs the same methods as the DR 2700, DR/2500, and DR/2400. Some exceptions do exist.

Reagents (Continued)

Description	Method	Platform	Range	Instrument	EPA Compliant	# Tests	Product Number
SILVER NITRATE BURET TITRATION METHOD							
	8225						
Chloride 2 Indicator Powder Pillows		PP			Yes	50	105766
Silver Nitrate Standard Solution, 0.0141N, 1 L		S	0-500 mg/L Cl ⁻		Yes		31653
Silver Nitrate Standard Solution, 0.141N, 500 mL		S	500-25,000 mg/L Cl ⁻				1255149
LACHAT INSTRUMENT REAGENTS							
Chloride Reagent Set (Please contact Technical Support for determination of method and range.)				Lachat QuikChem® 8500 System		500	52901

Test Strips

Description	Platform	Range	# Tests	Product Number
Low Range Chloride Test Strip (Quantab®)	TS	30-600 mg/L Cl ⁻ (10-20 mg/L increments)	40	2744940
High Range Chloride Test Strip (Quantab®)	TS	300-6,000 mg/L Cl ⁻ (100-200 mg/L increments)	40	2751340

Test Kits

Description	Platform	Range	# Tests	Product Number
Chloride Test Kit (Model 8-P), Plastic Case	DCT	5-100 / 20-400 mg/L Cl ⁻	100	144001
Chloride Test Kit (Model CD-51)	DCT	500-10,000; 5,000-100,000 mg/L Cl ⁻	100	208601
Chloride Test Kit (Model CD-DT), Mercuric Nitrate	DT	10-8,000 mg/L Cl ⁻	100	2063500
Chloride Test Kit (Model CDS-DT), Silver Nitrate	DT	10-10,000 mg/L Cl ⁻	100	2580600

Standards

Description	Volume	Concentration	Product Number
Chloride Standard Solution as Cl ⁻ (NIST)	1 L	100 mg/L Cl ⁻	2370853
Chloride Standard Solution as Cl ⁻ (NIST)	500 mL	1,000 mg/L Cl ⁻	18349
Chloride Standard Solution as Cl ⁻ (NIST)	10 mL/16 Voluette Ampules	12,500 mg/L Cl ⁻	1425010

Accessories Required to Run Tests

Description	Product Number
Digital Titrator	1690001
Buret, Class A, 25 mL	2636540
Buret, Class A, 50 mL	2636541

Chlorine

- Multiple reagent platforms available
- Hach's DPD formulation allows for high levels of sample hardness with no interference and unparalleled reagent stability
- EPA accepted DPD method
- Multiple ranges available—from ultra low range to high range

**Reagents**

Description	Method	Platform	Range	Instrument*	EPA Compliant	# Tests	Product Number
ULTRA LOW RANGE							
Total Chlorine Reagent Set	8370		2-500 µg/L Cl ₂	All except DR/800, PC II	Yes	20	2563000
Set Includes:							
(1) ULR Chlorine Buffer Solution, 1.5 mL Ampules		S				20	2493120
(1) DPD Indicator Solution for ULR Chlorine, 1.5 mL Ampules		S				20	2493220
(1) Blanking Reagent for ULR Chlorine, 29 mL		S				20	2493023
LOW RANGE							
Total Chlorine Reagent Set, Rapid Liquid	10060		0.02-2.00 mg/L Cl ₂	All except DR/4000, DR/800, PC II		450	2557000
Set Includes:							
(1) DPD Indicator Powder, 24 g		Jar				450	2297255
(1) Total Chlorine Indicator Solution, 473 mL		S				450	2263411
(1) Total Chlorine Buffer Solution, 473 mL		S				450	2263511

*Generally, the DR 5000 performs the same methods as the DR/4000. The DR 2800 performs the same methods as the DR 2700, DR/2500, and DR/2400. Some exceptions do exist.





Reagents (Continued)

Description	Method	Platform	Range	Instrument*	EPA Compliant	# Tests	Product Number
LOW RANGE							
Free Chlorine Reagent Set , Rapid Liquid Set Includes:	10059		0.02-2.00 mg/L Cl ₂	All except DR/4000, DR/890, PC II		450	2556900
(1) DPD Indicator Powder, 24 g		Jar				450	2297255
(1) Free Chlorine Indicator Solution, 473 mL		S				450	2314011
(1) Free Chlorine Buffer Solution, 473 mL		S				450	2314111
FREE CHLORINE, LOW RANGE							
Free Chlorine, 10-mL Powder Pillows	8021	PP	0.02-2.00 mg/L Cl ₂	All except DR/3000, DR/2000	Yes	100	2105569
						300	2105503
Free Chlorine, 10-mL Powder Pillows	8021	PP	0.02-2.00 mg/L Cl ₂	All except DR/3000, DR/2000	Yes	1,000	2105528
Free Chlorine, 25-mL Powder Pillows	8021	PP	0.02-2.00 mg/L Cl ₂	DR/3000, DR/2000	Yes	100	1407099
						1000	1407028
Free Chlorine, AccuVac Reagent	8021	AV	0.02-2.00 mg/L Cl ₂	All	Yes	25	2502025
Free Chlorine, SwifTest Dispenser	8021	SW	0.02-2.00 mg/L Cl ₂	All except DR/3000, DR/2000	Yes	250	2802300
Free Chlorine, SwifTest Dispenser Reagent (refill)	8021	SW	0.02-2.00 mg/L Cl ₂	All except DR/3000, DR/2000	Yes	250	2105560
Free Chlorine, TNTplus	10231	TNT+	0.05-2.00 mg/L Cl ₂	DR 5000, DR 3800, DR 2800	Yes	39	TNT866
Free Chlorine, Indophenol	10241	PP S	0.04-4.50 mg/L Cl ₂	All except DR/820		100	2802299 2964926
TOTAL CHLORINE, LOW RANGE							
Total Chlorine, 10-mL Powder Pillows	8167	PP	0.02-2.00 mg/L Cl ₂	All except DR/3000, DR/2000	Yes	100	2105669
						300	2105603
Total Chlorine, 10-mL Powder Pillows	8167	PP	0.02-2.00 mg/L Cl ₂	All except DR/3000, DR/2000	Yes	1,000	2105628
Total Chlorine, 25-mL Powder Pillows	8167	PP	0.02-2.00 mg/L Cl ₂	DR/3000, DR/2000	Yes	100	1406499
						1,000	1406428
Total Chlorine, AccuVac Reagent	8167	AV	0.02-2.00 mg/L Cl ₂	All	Yes	25	2503025
Total Chlorine, SwifTest Dispenser	8167	SW	0.02-2.00; 0.02-4.50 mg/L Cl ₂	All except DR/3000, DR/2000	Yes	250	2802400
Total Chlorine, SwifTest Dispenser Reagent (refill)	8167	SW	0.02-2.00; 0.02-4.50 mg/L Cl ₂	All except DR/3000, DR/2000	Yes	250	2105660
Total & Free Chlorine, TNTplus	10232	TNT+	0.05-2.00 mg/L Cl ₂	DR 5000, DR 3800, DR 2800	Yes	39	TNT866T
HIGH RANGE							
Free Chlorine, 25-mL Powder Pillows [†]	10069	PP	0.1-10.0 mg/L Cl ₂	All	Yes	100	1407099
Free Chlorine, 25-mL Powder Pillows [†]	10069	PP	0.1-10.0 mg/L Cl ₂	All	Yes	1,000	1407028
Free Chlorine, Test 'N Tube	10102	TNT	0.09-5.00 mg/L Cl ₂	All except PC II		50	2105545
Total Chlorine, 25-mL Powder Pillows [†]	10070	PP	0.1-10.0 mg/L Cl ₂	All	Yes	100	1406499
Total Chlorine, 25-mL Powder Pillows [†]	10070	PP	0.1-10.0 mg/L Cl ₂	All	Yes	1,000	1406428
Total Chlorine, Test 'N Tube	10101	TNT	0.09-5.00 mg/L Cl ₂	All except PC II		50	2105645
AMPEROMETRIC TITRATOR TITRATION							
(Buret Titration for Free Chlorine)	8334						
Phenylarsine Oxide Solution, 0.00564 N, 1 L		S	0.5 mg/L and above Cl ₂	AutoCAT™ 9000	Yes		199953
Phosphate Buffer Solution, pH 7.0, 100 mL		S	0.5 mg/L and above Cl ₂	AutoCAT™ 9000	Yes	100	2155332
AMPEROMETRIC DIGITAL TITRATOR TITRATION							
(Forward Titration for Free Chlorine)	10024						
Phenylarsine Oxide Solution, 0.00564 N CRTG		DT	0 - 1,000 µg/L Cl ₂		Yes		199901
Phosphate Buffer Solution, pH 7.0, 100 mL		S	0 - 1,000 µg/L Cl ₂		Yes	100	2155332

[†]Also used in Test Kit Models CN-70 and CN-80.

Continued on next page.

*Generally, the DR 5000 performs the same methods as the DR/4000. The DR 2800 performs the same methods as the DR 2700, DR/2500, and DR/2400. Some exceptions do exist.

Reagents (Continued)

Description	Method	Platform	Range	Instrument	EPA Compliant	# Tests	Product Number
AMPEROMETRIC TITRATOR TITRATION							
(Back Titration for Total Chlorine)	10025						
Acetate Buffer Solution, pH 4.0, w/ dropper, 100 mL		S	0.0051-5.000 mg/L Cl ₂	AutoCAT™ 9000	Yes	100	1490932
Iodine Standard Solution, 0.0282 N, 1 L		S	0.0051-5.000 mg/L Cl ₂	AutoCAT™ 9000	Yes	100	2333353
Phenylarsine Oxide (PAO) Titrant, 0.00564 N, 1 L		S	0.0051-5.000 mg/L Cl ₂	AutoCAT™ 9000	Yes		199953
Phosphate Buffer Solution, pH 7.0, w/ dropper, 100 mL		S	0.0051-5.000 mg/L Cl ₂	AutoCAT™ 9000	Yes	100	2155332
Potassium Iodide, SwifTest Refill			0.0051-5.000 mg/L Cl ₂	AutoCAT™ 9000	Yes		107760
AMPEROMETRIC TITRATOR TITRATION							
(Forward Titration for Total Chlorine)	8168						
Acetate Buffer Solution, pH 4.0, w/ dropper, 100 mL		S	0.0012-5.000 mg/L Cl ₂	AutoCAT™ 9000	Yes	100	1490932
Phenylarsine Oxide (PAO) Titrant, 0.00564 N, 1 L		S	0.0012-5.000 mg/L Cl ₂	AutoCAT™ 9000	Yes		199953
Potassium Iodide, SwifTest Refill			0.0012-5.000 mg/L Cl ₂	AutoCAT™ 9000	Yes		107760
AMPEROMETRIC DIGITAL TITRATOR TITRATION							
(Back Titration for Total Chlorine)	10025						
Acetate Buffer Solution, pH 4.0, 100 mL		S	6 -1,000 µg/L Cl ₂		Yes	100	1490932
Potassium Iodide Powder Pillows		PP	6 -1,000 µg/L Cl ₂			100	107799
Standard Iodine Titrant Solution Cartridge, 0.028 N		DT	6 -1,000 µg/L Cl ₂		Yes		2333301
Sodium Thiosulfate Standard Solution, 0.00564 N, 100 mL		S	6 -1,000 µg/L Cl ₂		Yes	100	2408842
AMPEROMETRIC DIGITAL TITRATOR TITRATION							
(Forward Titration for Total Chlorine)	10026						
Phenylarsine Oxide Solution, 0.00564 N CRTG		DT	15-1,000 µg/L Cl ₂		Yes		199901
Acetate Buffer Solution, pH 4.0, 100 mL		S	15-1,000 µg/L Cl ₂		Yes	100	1490932
Potassium Iodide Powder Pillows		PP	15-1,000 µg/L Cl ₂		Yes	100	107799
IODOMETRIC METHOD							
(Using Sodium Thiosulfate)							
Buret Titration							
	8161						
Dissolved Oxygen 3 Powder Pillows		PP	0-40,000 mg/L			100	98799
Potassium Iodide Powder Pillows		PP	0-40,000 mg/L			100	107799
Sodium Thiosulfate Standard Solution, 0.025 N, 1 L		S	0-400 mg/L			40-100	35253
Starch Indicator Solution, 100 mL		S				40-100	34932
DPD-FEAS							
	8210						
DPD Free Chlorine Powder Pillow		PP	0-3.00 mg/L Cl ₂			100	1407099
DPD Total Chlorine Powder Pillow		PP	0-3.00 mg/L Cl ₂			100	1406499
Ferrous Ethylenediammonium Sulfate (FEAS) Titration Cartridge			0-3.00 mg/L Cl ₂				2292301
Potassium Iodide solution, 30 g/L, 100 mL		S					34332
DIGITAL TITRATOR TITRATION							
	8209						
Total Chlorine Reagents , Digital Titrator, Low Range		DT	1-400 mg/L Cl ₂				
(1) Acetate Buffer Solution, pH 4.0, 100 mL		S				50	1490932
(1) Potassium Iodide Powder Pillows		PP				100	107799
(1) Sodium Thiosulfate Titration Cartridge, 0.02256 N		DT				40-100	2409101
(1) Starch Indicator Solution, 100 mL		S				40-100	34932
Total Chlorine Reagent Set , Digital Titrator, Mid Range		DT	20-2,000 mg/L Cl ₂			100	2272500
Set Includes:							
(1) Dissolved Oxygen 3 Powder Pillows		PP				100	98799
(1) Potassium Iodide Powder Pillows		PP				100	107799
(1) Sodium Thiosulfate Titration Cartridge, 0.113 N		DT				40-100	2267301
(1) Starch Indicator Solution, 100 mL		S				40-100	34932
Total Chlorine Reagent Set , Digital Titrator, High Range		DT	2,000-70,000 mg/L Cl ₂			100	2444800
Set Includes:							
(1) Dissolved Oxygen 3 Powder Pillows		PP				100	98799
(2) Potassium Iodide Powder Pillows		PP				50	2059996
(2) Sodium Thiosulfate Titration Cartridge, 2.00 N		DT				40-100	1440101
(1) Starch Indicator Solution, 100 mL		S				40-100	34932

Also see Hypochlorite on
page 165 to assay
disinfectant solutions.

For on-line chlorine measurement
see pages 404-405.

About Cl₂, I₂ and Br₂ testing...

All of our total chlorine test kits can be used to measure iodine or bromine in the absence of chlorine or other oxidants.

For iodine concentration, multiply test results by 3.58. For bromine concentration, multiply test results by 2.25.

Kits are also available for the direct measurement of iodine and bromine.



MOST POPULAR!

Test Strips

Description	Platform	Range	# Tests	Product Number
LOW RANGE				
Free & Total Chlorine Test Strips, Low Range	TS	0-10 mg/L Cl ₂ (0, 0.5, 1, 2, 4, 10 steps)	50	2745050
Free & Total Chlorine Test Strips, Low Range	TS	0-10 mg/L Cl ₂ (0, 0.5, 1, 2, 4, 10 steps)	250 (individually wrapped)	2793944
HIGH RANGE				
Free Chlorine Test Strips, High Range	TS	0 to 600 mg/L Cl ₂ (0, 25, 50, 100, 200, 400, 600 steps)	100	2890200

Test Kits

Description	Method	Platform	Range	EPA Compliant	# Tests	Product Number
TEST KITS-LOW RANGE						
Free & Total Chlorine Test Kit (Model CN-66)		CD	0.1-3.5 mg/L Cl ₂		200 [†]	223101
Free Chlorine Test Kit (Model CN-66F)		CD	0.1-3.5 mg/L Cl ₂		100	223102
Total Chlorine Test Kit (CN-66T)		CD	0.1-3.5 mg/L Cl ₂		100	223103
Free Chlorine Test Kit (CN-70F)		CD	0.02-0.7 / 0.1-3.5 mg/L Cl ₂		200	1454201
Total Chlorine Test Kit (CN-70T)		CD	0.02-0.7 / 0.1-3.5 mg/L Cl ₂		200 [†]	1454202
Free & Total Chlorine Test Kit (Model CN-70)		CD	0.02-0.7 / 0.1-3.5 mg/L Cl ₂		200 [†]	1454200
Free & Total Chlorine Test Kit (Model CN-80)		CD	0.02-0.7/ 0.1-3.5/ 0.5-10 (Total only) mg/L Cl ₂		200	2129000
Free Chlorine Test Kit (AccuVac)		CD, AV	0.1-2.5 mg/L Cl ₂		25	2502050
Total Chlorine Test Kit (AccuVac)		CD, AV	0.1-2.5 mg/L Cl ₂		25	2503050
Free Chlorine Color Cube Kit		CC	0.5-2.5 mg/L Cl ₂		50	2060300
Total Chlorine Color Cube Kit		CC	0.5-2.5 mg/L Cl ₂		50	2060400
Pocket Colorimeter™ II, Chlorine, Free & Total	8021(F), 8167(T)	PP	0.02-2.00/0.1-8.0 mg/L Cl ₂ Kit includes PC II	Yes	50-100	5870000
TEST KITS-MID AND HIGH RANGE						
Total Chlorine Test Kit (Model CN-65)		DCT	0.2-4/ 1-20 mg/L Cl ₂		100	225401
Total Chlorine Test Kit (Model CN-21P)		DCT	10-200 mg/L Cl ₂		100	2444400
Pocket Colorimeter™ II, Chlorine, Free & Total	8021(F), 8167(T)	PP	0.02-2.00/0.1-8.0 mg/L Cl ₂ Kit includes PC II	Yes	50-100	5870000
Pocket Colorimeter™ II, Chlorine, Free & Total & pH		PP	0.1-10.0 mg/L Cl ₂ ; 6.0-8.5 pH Kit includes PC II	Yes	100	5870012
Chlorine Test Kit (Model CN-DT)		DT	20-2,000 mg/L Cl ₂		100	2471100

CHLORINE, SWIFTEST™ DISPENSER KITS

Pocket Colorimeter™ II, Free Chlorine	8021	SW	0.02-2.00/0.1-8.0 mg/L Cl ₂ Kit includes PC II	Yes	125-250	5870023
Pocket Colorimeter™ II, Total Chlorine	8167	SW	0.02-2.00/0.1-8.0 mg/L Cl ₂ Kit includes PC II	Yes	125-250	5870024

[†]100 tests each of Total and Free Chlorine.

- Spec✓ colored gels provide a stable simulation of the colors produced by the analytical method. Use them for a convenient check on instrument performance.

Standards

Description	Volume	Concentration	Instruments	Product Number
Spec✓ Gel Secondary Standard Kit-LR Chlorine, DPD	Set of 4 Vials	0 - 2.0 mg/L Cl ₂	Includes values for all instruments	2635300
Spec✓ Gel Secondary Standard Kit-HR Chlorine, DPD	Set of 4 Vials	0 - 8.0 mg/L Cl ₂	Includes values for all instruments, except DR/3000 and DR/700	2893300
Chlorine Standard Solution as Cl ₂ (NIST)	2 mL/ 20 PourRite Ampules	25-30 mg/L Cl ₂		2630020
Chlorine Standard Solution as Cl ₂ (NIST)	2 mL/ 20 PourRite Ampules	50-75 mg/L Cl ₂		1426820
Chlorine Standard Solution as Cl ₂ (NIST)	10 mL/ 16 Volute Ampules	50-75 mg/L Cl ₂		1426810

PLATFORM KEY: AV=AccuVac®; CC=Color Cube; CD=Color Disc; DCT=Drop Count Titration; DT=Digital Titrator; EX=Extraction; IA=Immunoassay; PCII=Pocket Colorimeter™ II; PP=Powder Pillows; RL=Rapid Liquid; S=Solution; SP=Solution Pillow; SW=SwiftTest™; TNT=Test 'N Tube™; TNT+=TNTplus™; TRB=Turbidity; TS=Test Strip

Chlorine Demand / Requirement

- Determine chlorine demand and chlorine requirements for drinking water production

- Establish background data and chlorine demand constants
- Determine chlorine demand on distributed waters

NEW!

Reagents

Description	Method	Platform	Range	Instrument*	# Tests	Product Number
DPD Free Chlorine Reagent Powder Pillows, 10 mL sample	10223	PP	Varies	All except DR/3000, DR/2000	Varies	2105569
DPD Free Chlorine Reagent Powder Pillows, 25 mL sample		PP	Varies	DR/3000, DR/2000	Varies	1407099
Chlorine Dosing Ampules, 1190-1310 mg/L as Cl ₂ , 10 mL ampules, 16/pkg		S	Varies	All	Varies	2504810

Accessories Required to Run Tests

Description	Product Number
Bottles, Amber Glass, 118 mL, 6/pkg	714424
Caps, Black, PP Teflon liner, 12/pkg	2401812

Chlorine Dioxide

- Multiple methods available
- Available in multiple test formats

- Available in different reagent formats
- Direct-read (reagentless) methods are available on spectrophotometers, see pages 67-71

Reagents

Description	Method	Platform	Range	Instrument*	EPA Compliant	# Tests	Product Number
COLORIMETRIC							
Chlorine Dioxide Reagent Set , Chlorophenol Red Method	8065	PP, S	0.01-1.00 mg/L ClO ₂	All except DR/800, PC II		100	2242300
Set includes:							
(2) Chlorine Dioxide Reagent 1, 100 mL		S				50	2070042
(2) Chlorine Dioxide Reagent 2, 100 mL		S				50	2070142
(2) Chlorine Dioxide Reagent 3, 100 mL		S				50	2070242
(1) Dechlorinating Powder Pillows		PP				100	1436369
Chlorine Dioxide Reagent Set , DPD /glycine method	10126	PP	0.04-5.00 mg/L ClO ₂	All	Yes	100	2770900
Set includes:							
(1) DPD Free Chlorine Powder Pillows		PP				100	2105569
(1) Glycine Reagent, 29 mL		S				100	2762133
Chlorine Dioxide Reagent Set , DPD /glycine method	10126	AV	0.04-5.00 mg/L ClO ₂	All	Yes	25	2771000
Set includes:							
(1) DPD Free Chlorine AccuVac® ampules		AV				25	2502025
(1) Glycine Reagent, 29 mL		S				100	2762133

AMPEROMETRIC TITRATOR TITRATION (Buret Titration for Chlorine Dioxide and Chlorite)

Phenylarsine Oxide Solution, 0.00564 N, 1 L		S	0.5 mg/L and above Cl ₂	AutoCAT™ 9000	Yes		199953
Hydrochloric Acid Standard Solution, 2.5 N, 100 mL		S	0.10-5.00 mg/L, 100 mL	AutoCAT™ 9000	Yes	25	141832
Phosphate Buffer Solution, pH 7.0, 100 mL		S	0.5 mg/L and above Cl ₂	AutoCAT™ 9000	Yes	100	2155332
Potassium Iodide, ACS grade, 100 grams		Jar	0.10-5.00 mg/L	AutoCAT™ 9000		50	16726H

Test Kits

Description	Method	Platform	Range	Instrument*	EPA Compliant	# Tests	Product Number
Pocket Colorimeter™ II – Chlorine Dioxide, DPD Method	10126	PP	0.05-5.00 mg/L ClO ₂	Kit includes PC II	Yes	100	5870051
Chlorine Dioxide Test Kit (Model CLD-2), DPD Method		CD	0.1-2 mg/L ClO ₂			100	2842800

Accessories Required to Run Tests

Description	Product Number
CHLOROPHENOL RED METHOD	
Cylinder, Graduated Mixing, 50-mL	189641
Pipet, Volumetric, Class A, 1.00-mL	1451535
Pipet Filler, Safety Bulb	1465100

*Generally, the DR 5000 performs the same methods as the DR/4000. The DR 2800 performs the same methods as the DR 2700, DR/2500, and DR/2400. Some exceptions do exist.

