

# 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.



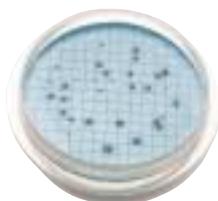
**TNT (Test 'N Tube™)**  
The right blend of simplicity and economy.

**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

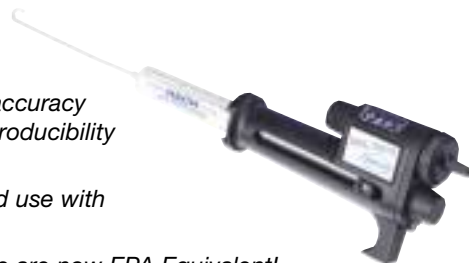
- The most accurate visual test kit method—Hach's color wheel provides fast, accurate comparisons
- Continuous color gradient allows better resolution of the concentration reading than stepwise comparators



## 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 <sub>3</sub>                                                                                            | 100          |
| Also available: |                                                                                                                                  |              |
| 2930500         | Reagent Set for HR Aqua Ammonia Kit<br>Includes: 8.0 N Sulfuric Acid Titration Cartridge and<br>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 <sub>2</sub><br>50 Total Cl <sub>2</sub> |
| 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<br>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          | 0-25 gpg   | 0, 1.5, 3, 7, 15, 25             |              |
|           | (as CaCO <sub>3</sub> ) | 0-425 mg/L | 0, 25, 50, 120, 250, 425         |              |
|           | Total Alkalinity        | 0-240 mg/L | 0, 40, 80, 120, 180, 240         |              |
|           | (as CaCO <sub>3</sub> ) |            |                                  |              |
|           | 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](http://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

Chromium, Hexavalent and Total

**Reagents**

| Description                                          | Method | Platform | Range                                      | # Tests | Product Number |
|------------------------------------------------------|--------|----------|--------------------------------------------|---------|----------------|
| <b>DIGITAL TITRATOR TITRATION</b>                    | 8211   |          |                                            |         |                |
| <b>Chromate Reagent Set</b>                          |        | PP, DT   | 20-400 mg/L CrO <sub>4</sub> <sup>2-</sup> | 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 <sup>6+</sup> | 1466442        |
| Chromium, Hexavalent Standard | 100 mL | 50 mg/L Cr <sup>6+</sup>    | 81042H         |

**Accessories Required to Run Tests**

| Description      | Product Number |
|------------------|----------------|
| Digital Titrator | 1690001        |

**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 <sup>6+</sup> | except DR/3000, DR/2000, DR/850, DR/820 | Yes           | 100<br>1,000 | 1271099<br>1271028 |
| ChromaVer®3 Chromium AccuVac             | 8023                                   | AV       | 0.010-0.700 mg/L Cr <sup>6+</sup> | All except DR/850, DR/820               | Yes           | 25           | 2505025            |
| ChromaVer®3 Chromium Reagent PR, 25 mL   | 8023                                   | PP       | 0-1.00 mg/L Cr <sup>6+</sup>      | DR/3000, DR/2000                        | Yes           | 100          | 1206699            |
| <b>Total Chromium Reagent Set</b>        | 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 <sup>6+</sup> )<br>10219 (T) | TNT+     | 0.03-1.00 mg/L Cr                 | DR 5000, DR 3800, DR 2800               | Yes†          | 25           | TNT854             |

\*EPA equivalent for Cr<sup>6+</sup> only.

**Test Kits**

| Description                                                                      | Method | Platform | Range                           | # Tests                              | Product Number |
|----------------------------------------------------------------------------------|--------|----------|---------------------------------|--------------------------------------|----------------|
| Chromium Test Kit, as Hexavalent Cr                                              |        | CC       | 0.2-1.0 mg/L Cr <sup>6+</sup>   | 50                                   | 1252700        |
| Chromium Test Kit, as Hexavalent Cr (Model CH-8)                                 |        | CD       | 0.1-1.5 mg/L Cr <sup>6+</sup>   | 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 <sup>6+</sup> )<br>50 (Total) | 222800         |
| Pocket Colorimeter™ II – Chromium, Hexavalent                                    | 8023   | PCII     | 0.01-0.70 mg/L Cr <sup>6+</sup> | 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

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U.S. customers only.

**HACH**  
Be Right™

149

Standards are the tools used to confirm the accuracy of your lab equipment.

These key accessories may be needed to perform the tests.

Method numbers can be used to confirm proper procedure and reagent use.

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 |
|------------------------------------------------------------------------------------------------|-----------------------|----------|-----------------------------------------------------------------------------|---------------|---------|----------------|
| <b>BURET TITRATION</b>                                                                         | 8219 (MO)<br>8010 (P) |          | 0-5,000 mg/L CaCO <sub>3</sub> (MO);<br>0-10,000 mg/L CaCO <sub>3</sub> (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          |
| <b>DIGITAL TITRATOR TITRATION</b>                                                              | 8201 (MO)<br>8202 (P) |          |                                                                             |               |         |                |
| <b>Acidity Reagent Set</b><br>(for Methyl Orange and Phenolphthalein Acidity)<br>Set includes: |                       | DT       | 10-160 mg/L CaCO <sub>3</sub> ; 100-4,000 mg/L CaCO <sub>3</sub>            |               | 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 <sub>3</sub>                                               | Yes†          | 40-100  | 1437701        |
| (1) Sodium Hydroxide Titration Cartridge 1.600 N                                               |                       | DT       | 100-4,000 mg/L CaCO <sub>3</sub>                                            | Yes†          | 40-100  | 1437901        |
| Water, Deionized (4L Bottle)                                                                   |                       | S        |                                                                             |               |         | 27256          |
| <b>OPTIONAL REAGENTS</b>                                                                       |                       |          |                                                                             |               |         |                |
| 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 <sub>3</sub> (Model AC-DT)                  | DT       | 10-4,000 mg/L CaCO <sub>3</sub>      | 100     | 2064000        |
| Methyl-Orange (MO) & Phenolphthalein (P), LR Test Kit (Model AC-6) | DCT      | 5-100; 20-400 mg/L CaCO <sub>3</sub> | 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 |
|---------------------------------------------------------------------------------------|----------------------------|----------|------------------|---------|----------------|
| <b>BURET TITRATION</b>                                                                | 8288 (Acid)<br>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         |
| <b>DIGITAL TITRATOR TITRATION</b>                                                     | 8200 (Acid)<br>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,<br>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=SwiftTest™; 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 |
|-------------------------------------------------------|--------|----------|----------------------------------|---------------------------|---------------|---------|----------------|
| <b>BURET TITRATION</b>                                |        |          |                                  |                           |               |         |                |
|                                                       | 8221   |          |                                  |                           |               |         |                |
| Bromcresol Green-Methyl Red Indicator                 |        | PP       | 0-5,000 mg/L CaCO <sub>3</sub>   |                           |               | 100     | 94399          |
| Phenolphthalein Indicator                             |        | PP       | 0-5,000 mg/L CaCO <sub>3</sub>   |                           |               | 100     | 94299          |
| Sulfuric Acid Standard Solution, 0.020 N (1 L Bottle) |        | S        | 0-5,000 mg/L CaCO <sub>3</sub>   |                           | Yes†          |         | 20353          |
| Water, Deionized (4L Bottle)                          |        | S        |                                  |                           |               |         | 27256          |
| <b>DIGITAL TITRATOR TITRATION</b>                     |        |          |                                  |                           |               |         |                |
|                                                       | 8203   |          |                                  |                           |               |         |                |
| Alkalinity Reagent Set                                |        | DT       | 10-4,000 mg/L CaCO <sub>3</sub>  |                           |               | 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 <sub>3</sub> |                           | Yes†          | 40-100  | 1438901        |
| (1) Sulfuric Acid Titration Cartridge, 0.1600 N       |        | DT       | 10-160 mg/L CaCO <sub>3</sub>    |                           | Yes†          | 40-100  | 1438801        |
| Water, Deionized (4L Bottle)                          |        | S        |                                  |                           |               |         | 27256          |
| <b>COLORIMETRIC</b>                                   |        |          |                                  |                           |               |         |                |
| Total Alkalinity TNTplus                              | 10239  | TNT+     | 25-400 mg/L CaCO <sub>3</sub>    | 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 <sub>3</sub> (Model AL-AP)       | DCT, PP  | 0.4-8 gpg / 1-20 gpg**          | 100     | 2444300        |
| P & Total (MO) as CaCO <sub>3</sub> (Model AL-AP, MG-L) | DCT, PP  | 5-100 mg/L / 20-400 mg/L        | 100     | 2444301        |
| P & Total (MO) as CaCO <sub>3</sub> (Model AL-TA)       | DCT, PP  | 23-495 gpg / 385-8500 mg/L      | 100     | 2314500        |
| P & Total (MO) as CaCO <sub>3</sub> (Model AL-DT)       | DT, PP   | 10-4,000 mg/L CaCO <sub>3</sub> | 100     | 2063700        |

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

## Standards

| Description                  | Volume                           | Concentration                        | Product Number |
|------------------------------|----------------------------------|--------------------------------------|----------------|
| Alkalinity Standard Solution | 10 mL/ 16<br>Volumetric Ampoules | 25,000 mg/L CaCO <sub>3</sub> (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      | <b>TNT848</b>  |
| <b>Aluminum Reagent Set, ECR 10mL</b>            | 8326   | PP, S    | 0.002-0.250 mg/L Al | DR 5000, DR 3800, DR 2800, DR 2700, DR/2010 | 100     | <b>2603700</b> |
| Set Includes:                                    |        |          |                     |                                             |         |                |
| (1) ECR Reagent Powder Pillows                   |        | PP       |                     |                                             | 100     | <b>2603849</b> |
| (1) Hexamethylenetetramine Buffer Powder Pillows |        | PP       |                     |                                             | 100     | <b>2603999</b> |
| (1) ECR Masking Reagent Solution, 25 mL          |        | S        |                     |                                             | 100     | <b>2380123</b> |
| <b>Aluminum Reagent Set, ECR 25 mL</b>           | 8326   | PP, S    | 0-0.220 mg/L Al     | DR/3000, DR/2000                            | 100     | <b>2443400</b> |
| Set Includes:                                    |        |          |                     |                                             |         |                |
| (4) ECR Reagent Powder Pillows                   |        | PP       |                     |                                             | 25      | <b>2380268</b> |
| (2) Hexamethylenetetramine Powder Pillows        |        | PP       |                     |                                             | 50      | <b>187866</b>  |
| (1) ECR Masking Reagent Solution, 25 mL          |        | S        |                     |                                             | 100     | <b>2380123</b> |
| <b>Aluminum Reagent Set, Aluminon</b>            | 8012   | PP       | 0.008-0.800 mg/L Al | All                                         | 100     | <b>2242000</b> |
| Set Includes:                                    |        |          |                     |                                             |         |                |
| (1) AluVer® 3 Aluminum Powder Pillows            |        | PP       |                     |                                             | 100     | <b>1429099</b> |
| (1) Ascorbic Acid Powder Pillows                 |        | PP       |                     |                                             | 100     | <b>1457799</b> |
| (1) Bleaching 3 Powder Pillows                   |        | PP       |                     |                                             | 100     | <b>1429449</b> |

## 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     | <b>5870025</b> |

## Standards

| Description                | Volume                        | Concentration | Product Number |
|----------------------------|-------------------------------|---------------|----------------|
| Aluminum Standard Solution | 100 mL                        | 10 mg/L Al    | <b>2305842</b> |
| Aluminum Standard Solution | 10 mL/16<br>Voluette Ampoules | 50 mg/L Al    | <b>1479210</b> |
| Aluminum Standard Solution | 100 mL                        | 100 mg/L Al   | <b>1417442</b> |

## Accessories Required to Run Tests

| Description                          | Product Number |
|--------------------------------------|----------------|
| Sample Blank Vials for TNTplus, 5/pk | <b>TNT919</b>  |



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

### LACHAT INSTRUMENT REAGENTS

|                                                                                                       |                              |     |              |
|-------------------------------------------------------------------------------------------------------|------------------------------|-----|--------------|
| <b>Ammonia Reagent Set</b><br>Please contact Technical Support for determination of method and range. | Lachat QuikChem® 8500 System | 500 | <b>52904</b> |
|-------------------------------------------------------------------------------------------------------|------------------------------|-----|--------------|

†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 <sub>3</sub> -N (0, 0.25, 0.5, 1, 3, 6 steps) | 25      | <b>2755325</b> |

## Test Kits

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

**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 <sub>3</sub> -N (NIST)                                                        | 500 mL                   | 1 mg/L NH <sub>3</sub> -N                                                                                                                                                                                     | 189149         |
| Ammonia Nitrogen Standard Solution                                                                            | 500 mL                   | 10 mg/L NH <sub>3</sub> -N                                                                                                                                                                                    | 15349          |
| Ammonia Standard Solution as NH <sub>3</sub> -N (NIST)                                                        | 10 mL/16 Volute Ampules  | 50 mg/L NH <sub>3</sub> -N                                                                                                                                                                                    | 1479110        |
| Ammonia Standard Solution                                                                                     | 2 mL/20 PourRite Ampules | 50 mg/L NH <sub>3</sub> -N                                                                                                                                                                                    | 1479120        |
| Ammonia Standard Solution as NH <sub>3</sub> -N                                                               | 500 mL                   | 100 mg/L NH <sub>3</sub> -N                                                                                                                                                                                   | 2406549        |
| Ammonia Standard Solution as NH <sub>3</sub> -N (NIST)                                                        | 10 mL/16 Volute Ampules  | 150 mg/L NH <sub>3</sub> -N                                                                                                                                                                                   | 2128410        |
| Ammonia Standard Solution                                                                                     | 10 mL/16 Volute Ampules  | 160 mg/L NH <sub>3</sub> -N                                                                                                                                                                                   | 2109110        |
| Ammonia Standard Solution                                                                                     | 1 L                      | 1,000 mg/L NH <sub>3</sub> -N                                                                                                                                                                                 | 2354153        |
| Wastewater Influent Inorganics, Mixed Parameter QC Standard; (Ammonia, Nitrate, Phosphate, COD, Sulfate, TOC) | 500 mL                   | Ammonia-15 mg/L NH <sub>3</sub> -N; Nitrate-10 mg/L NO <sub>3</sub> -N; Phosphate-10 mg/L PO <sub>4</sub> <sup>3-</sup> ; COD-500 mg/L COD; Sulfate-400 mg/L SO <sub>4</sub> <sup>2-</sup> ; 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 <sub>3</sub> -N; Nitrate- 4 mg/L NO <sub>3</sub> -N; Phosphate- 2 mg/L PO <sub>4</sub> <sup>3-</sup> ; COD- 25 mg/L COD; Sulfate- 50 mg/L SO <sub>4</sub> <sup>2-</sup> ; 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 |
|-------------------------------------------------------------------------------------------------------------------------|--------|----------|--------------------------------------|---------------------------------------------|---------|----------------|
| <b>Free Ammonia Reagent Set</b><br>Set includes:<br>(1) Free Ammonia Reagent Solution<br>(1) Monochlor F Powder Pillows | 10200  | PP, S    | 0.02-0.50 mg/L NH <sub>3</sub> -N    | All except DR/820                           | 50      | 2879700        |
|                                                                                                                         |        | S        |                                      |                                             | 50      | 2877336        |
|                                                                                                                         |        | PP       |                                      |                                             | 50      | 2802299        |
| <b>Free Ammonia Reagent Set</b><br>Set includes: same as above (5 each)                                                 | 10200  | PP, S    | 0.02-0.50 mg/L NH <sub>3</sub> -N    | All except DR/820                           | 250     | 2879701        |
| <b>Free Ammonia Reagent Set Starter Kit</b><br>Includes reagents, sample cells, and instructions.                       |        | PP, S    | 0.02 to 0.50 mg/L NH <sub>3</sub> -N | DR 5000, DR/4000, DR/2010, DR/890, DR/850   | 50      | 2879704        |
| <b>Free Ammonia Reagent Set Starter Kit</b><br>Includes reagents, sample cells, and instructions.                       |        | PP, S    | 0.02 to 0.50 mg/L NH <sub>3</sub> -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 <sub>2</sub><br>0.01 – 0.50 mg/L NH <sub>3</sub> -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 <sub>3</sub> -N<br>0.04-4.50 mg/L Cl <sub>2</sub> | Kit includes PC II                   | 50 Free Ammonia or<br>100 Monochloramine | 5870026        |
| Nitrification Control Kit<br>Contains tests for:<br>Free Ammonia<br>Monochloramine<br>Nitrite<br>Total Chlorine, LR<br>Total Chlorine, HR |        | PP, S    |                                                                     | Kit includes DR/890<br>+ Sample Cell |                                          | 2882200        |
|                                                                                                                                           |        |          | 0.02-0.50 mg/L NH <sub>3</sub> -N                                   |                                      | 50                                       |                |
|                                                                                                                                           |        |          | 0.0-4.50 mg/L Cl <sub>2</sub>                                       |                                      | 100                                      |                |
|                                                                                                                                           |        |          | 0-0.350 mg/L NO <sub>2</sub> <sup>-</sup> -N                        |                                      | 100                                      |                |
|                                                                                                                                           |        |          | 0-2.00 mg/L Cl <sub>2</sub>                                         |                                      | 100                                      |                |
|                                                                                                                                           |        |          | 0.1-10.0 mg/L Cl <sub>2</sub>                                       |                                      | 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 |
|------------------------------------------------------------------------------------------------------------------------------------|--------|----------|------------------------------------|---------|----------------|
| <b>DIGITAL TITRATOR TITRATION</b>                                                                                                  | 10222  |          |                                    |         |                |
| <b>Aqua Ammonia Reagent Set</b><br>Set includes:<br>Sulfuric Acid Titration Cartridge, 8.00 N<br>Wide Range 4 pH Indicator, 100 mL |        | DT       | 5-35% = 50-350 g/L NH <sub>3</sub> | 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 <sub>3</sub> | 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<br>Yes | # Tests<br>varies | Product Number |
|--------------------------------------------------------------------------|--------|----------|-----------------|-----------------------------|----------------------|-------------------|----------------|
| <b>SILVER DIETHYDITHIOCARBAMATE LAB METHOD</b><br>Distillation required. | 8013   |          | 0-0.200 mg/L As | All except<br>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)<br>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<br>AND                | 2265400        |
| Distillation Apparatus, General Purpose Accessories<br>AND EITHER | 2265300        |
| Distillation Apparatus Heater, 115 Vac, 60 Hz<br>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<br>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 |
|---------------------------------------------------------------------------------------------------|--------|---------|----------------|
| <b>DILUTION METHOD</b>                                                                            | 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        |
| <b>FOR DILUTION WATER PREPARATION</b>                                                             |        |         |                |
| 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> |        |         |                |
| <b>BODTRAK RESPIROMETRIC METHOD 10099</b>                                                         | 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<br>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<br>Voluette Ampules | 300 mg/L each (Glucose plus Glutamic Acid)                  | 1486510        |
| Glucose plus Glutamic Acid (Respirometric Method)                | 10 mL/ 16<br>Voluette Ampules | 3,000 mg/L each (Glucose plus Glutamic Acid)                | 1486610        |
| Oxygen Demand, Mixed Parameter QC Standard; (BOD, COD, TOC)      | 10 mL/ 16<br>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 |
|-------------------------------------------|--------|----------------|
| <b>DILUTION METHOD</b>                    | 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        |
| <b>RESPIROMETRIC METHOD</b>               | 10099  |                |
| Incubator, BOD (110V)                     |        | 2616200        |

# Boron

## Reagents

| Description                            | Method | Platform | Range           | Instrument*              | # Tests | Product Number |
|----------------------------------------|--------|----------|-----------------|--------------------------|---------|----------------|
| <b>BORON, CARMINE METHOD</b>           | 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 |
|--------------------------------------------------|--------|----------|--------------------------------|-----------------------------|---------|----------------|
| <b>DPD METHOD</b>                                | 8016   |          |                                |                             |         |                |
| DPD Total Chlorine Reagent AccuVac Ampules       |        | AV       | 0.05-4.50 mg/L Br <sub>2</sub> | All                         | 25      | 2503025        |
| DPD Total Chlorine Reagent Powder Pillows, 10 mL |        | PP       | 0.05-4.50 mg/L Br <sub>2</sub> | All except DR/3000, DR/2000 | 100     | 2105669        |
| DPD Total Chlorine Reagent Powder Pillows, 25 mL |        | PP       | 0.05-4.50 mg/L Br <sub>2</sub> | 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 <sub>2</sub> | Kit includes PC II | 50      | 5870001        |
| Bromine Test Kit (Model L-P Cube)         |        | CC       | 0.6-3.0 mg/L Br <sub>2</sub>              |                    | 50      | 2194000        |

# Cadmium

## Reagents

| Description                                                                                                      | Method | Platform | Range             | Instrument*               | # Tests | Product Number |
|------------------------------------------------------------------------------------------------------------------|--------|----------|-------------------|---------------------------|---------|----------------|
| <b>Cadmium Reagent Set</b>                                                                                       | 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         |
| <b>Cadmium Reagent Set, Air Freight Configuration</b> (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 $\text{Ca}^{2+}$ 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 |
|------------------------------------------------------|--------|----------|----------------------------------------|---------------|---------|----------------|
| <b>BURET TITRATION</b>                               |        |          |                                        |               |         |                |
| <b>Calcium Hardness Reagent Set</b> (Low Range)      | 8222   | PP, S    | 0-5,000 mg/ L $\text{CaCO}_3$          | 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 $\text{CaCO}_3$          | Yes           | 40-100  | 20553          |
| TitraVer EDTA Hardness Titrant, 0.200 N, 500 mL (HR) |        | S        | 1000-25,000 mg/L $\text{CaCO}_3$       |               |         | 102149         |
| Water, Deionized (4L Bottle)                         |        | S        |                                        |               |         | 27256          |
| <b>DIGITAL TITRATOR TITRATION</b>                    |        |          |                                        |               |         |                |
| <b>Calcium Hardness Reagent Set</b> (Low Range)      | 8204   | DT       | 10-160 mg/L $\text{CaCO}_3$            |               | 100     | 2447200        |
| Set includes:                                        |        |          |                                        |               |         |                |
| (1) 0.0800 M TitraVer EDTA Cartridge                 |        | DT       | 10-160 mg/L $\text{CaCO}_3$            |               | 40-100  | 1436401        |
| (2) Potassium Hydroxide, 8 N, 100 mL                 |        | S        |                                        |               | 100     | 28232H         |
| (1) CalVer 2 Powder Pillows                          |        | PP       |                                        |               | 100     | 85299          |
| <b>Calcium Hardness Reagents</b> (Low Range)         | 8204   | DT       | 1-16 G.d.h. $\text{CaCO}_3^\dagger$    |               | 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          |
| <b>Calcium Hardness Reagent Set</b> (High Range)     | 8204   | DT       | 100-4,000 mg/L $\text{CaCO}_3$         |               | 100     | 2447500        |
| Set includes:                                        |        |          |                                        |               |         |                |
| (1) 0.800 M TitraVer EDTA Cartridge                  |        | DT       | 100-4,000 mg/L $\text{CaCO}_3$         |               | 40-100  | 1439901        |
| (2) Potassium Hydroxide, 8 N, 100 mL                 |        | S        |                                        |               | 100     | 28232H         |
| (1) CalVer 2 Powder Pillows                          |        | PP       |                                        |               | 100     | 85299          |
| <b>Calcium Hardness Reagents</b> (High Range)        | 8204   | DT       | 10-100+ G.d.h. $\text{CaCO}_3^\dagger$ |               | 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          |

 $^\dagger$ G.d.h. = German degree hardness; 1 German degree hardness equals 17.9 mg/L  $\text{CaCO}_3$ 

See pages 98-100 for  
Hach Digital Titrator products.

## Test Strips

| Description                                       | Platform | Range                                                                | # Tests          | Product Number |
|---------------------------------------------------|----------|----------------------------------------------------------------------|------------------|----------------|
| Hardness Test Strips, Total (as $\text{CaCO}_3$ ) | TS       | 0-425 ppm, 0-25 gpg $\text{CaCO}_3$ (0, 25, 50, 120, 250, 425 steps) | 1,000 $^\dagger$ | 2793828        |
| Hardness Test Strips, Total (as $\text{CaCO}_3$ ) | TS       | 0-425 ppm, 0-25 gpg $\text{CaCO}_3$ (0, 25, 50, 120, 250, 425 steps) | 250 $^\dagger$   | 2793844        |
| Hardness Test Strips, Total (as $\text{CaCO}_3$ ) | TS       | 0-425 ppm, 0-25 gpg $\text{CaCO}_3$ (0, 25, 50, 120, 250, 425 steps) | 50               | 2745250        |

 $^\dagger$ 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<br>Volumetric Ampoules | 10,000 mg/L CaCO <sub>3</sub> | 218710         |
| Calcium Chloride Standard Solution | 1 L                             | 1,000 mg/L CaCO <sub>3</sub>  | 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 |
|----------------------------------------------------------------|--------|----------|------------------------------|---------|----------------|
| <b>BURET TITRATION</b>                                         | 8233   |          |                              |         |                |
| Phenolphthalein Powder Pillows                                 |        | PP       | 0-250 mg/L CO <sub>2</sub>   | 100     | 94299          |
| Sodium Hydroxide Standard Solution, 0.0227 N (1 L)             |        | S        | 0-250 mg/L CO <sub>2</sub>   |         | 19253          |
| <b>DIGITAL TITRATOR TITRATION</b>                              | 8205   |          |                              |         |                |
| <b>Carbon Dioxide Reagent Set, Full Range</b><br>Set includes: |        | DT       | 10-1000 mg/L CO <sub>2</sub> | 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        |
| <b>Carbon Dioxide Reagents, LR</b>                             |        | DT       | 10-100 mg/L CO <sub>2</sub>  |         |                |
| Phenolphthalein Powder Pillows                                 |        | PP       |                              | 100     | 94299          |
| Sodium Hydroxide Titration Cartridge, 0.3636 N                 |        | DT       |                              | 100     | 1437801        |
| <b>OPTIONAL REAGENTS</b>                                       |        |          |                              |         |                |
| 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 <sub>2</sub> <sup>†</sup> |         | 143601         |
| Carbon Dioxide Test Kit (Model CA-DT) | DT       | 10-1,000 mg/L CO <sub>2</sub>              |         | 2064100        |

<sup>†</sup>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<br>Volumetric Ampoules | 10,000 mg/L CO <sub>2</sub> | 1427510        |
| Carbon Dioxide Standard Solution       | 100 mL                          | 100 mg/L CO <sub>2</sub>    | 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=SwiftTest™; TNT=Test 'N Tube™; TNT+=TNTplus™; TRB=Turbidity; TS=Test Strip



## Reagents

| Description                                      | Method | Platform | Range                            | # Tests | Product Number |
|--------------------------------------------------|--------|----------|----------------------------------|---------|----------------|
| <b>FREE CHELANT--DIGITAL TITRATOR TITRATION</b>  | 8352   |          | 0-20.0 mg/L CaCO <sub>3</sub>    |         |                |
| 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        |
| <b>OPTIONAL REAGENTS</b>                         |        |          |                                  |         |                |
| Hardness 2 Indicator Solution, 100 mL MDB        |        | S        |                                  | ~300    | 42532          |
| <b>TOTAL CHELANT--DIGITAL TITRATOR TITRATION</b> | 8350   |          | 0-40.0 mg/L Na <sub>4</sub> 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 |
|--------------------------------------------------------|--------|----------|---------------------------------|--------------------------|---------------|---------|----------------|
| <b>MERCURIC THIOCYANATE COLORIMETRIC METHOD</b>        | 8113   |          |                                 |                          |               |         |                |
| <b>Chloride Reagent Set</b> (Mercuric Thiocyanate)     |        | S        | 0.1-25.0 mg/L Cl <sup>-</sup>   | 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          |
| <b>MERCURIC NITRATE DIGITAL TITRATOR TITRATION</b>     | 8206   |          |                                 |                          |               |         |                |
| <b>Mercuric Nitrate Chloride Reagent Set</b>           |        | DT       | 10-8,000 mg/L Cl <sup>-</sup>   |                          |               | 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          |
| <b>SILVER NITRATE DIGITAL TITRATOR TITRATION</b>       | 8207   |          |                                 |                          |               |         |                |
| <b>Silver Nitrate Chloride Reagent Set, Low Range</b>  |        | DT       | 10-100 mg/L Cl <sup>-</sup>     |                          |               | 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        |
| <b>Silver Nitrate Chloride Reagent Set, High Range</b> |        | DT       | 100-10,000 mg/L Cl <sup>-</sup> |                          |               | 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        |
| <b>Silver Nitrate Chloride Reagent Set, Full Range</b> |        | DT       | 10-10,000 mg/L Cl <sup>-</sup>  |                          |               | 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 |
|-------------------------------------------------------------------------------------------------------|--------|----------|---------------------------------|------------------------------|---------------|---------|----------------|
| <b>SILVER NITRATE BURET TITRATION METHOD</b>                                                          | 8225   |          |                                 |                              |               |         |                |
| Chloride 2 Indicator Powder Pillows                                                                   |        | PP       |                                 |                              | Yes           | 50      | 105766         |
| Silver Nitrate Standard Solution, 0.0141N, 1 L                                                        |        | S        | 0-500 mg/L Cl <sup>-</sup>      |                              | Yes           |         | 31653          |
| Silver Nitrate Standard Solution, 0.141N, 500 mL                                                      |        | S        | 500-25,000 mg/L Cl <sup>-</sup> |                              |               |         | 1255149        |
| <b>LACHAT INSTRUMENT REAGENTS</b>                                                                     |        |          |                                 |                              |               |         |                |
| <b>Chloride Reagent Set</b> (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 <sup>-</sup> (10-20 mg/L increments)      | 40      | 2744940        |
| High Range Chloride Test Strip (Quantab®) | TS       | 300-6,000 mg/L Cl <sup>-</sup> (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 <sup>-</sup>            | 100     | 144001         |
| Chloride Test Kit (Model CD-51)                   | DCT      | 500-10,000; 5,000-100,000 mg/L Cl <sup>-</sup> | 100     | 208601         |
| Chloride Test Kit (Model CD-DT), Mercuric Nitrate | DT       | 10-8,000 mg/L Cl <sup>-</sup>                  | 100     | 2063500        |
| Chloride Test Kit (Model CDS-DT), Silver Nitrate  | DT       | 10-10,000 mg/L Cl <sup>-</sup>                 | 100     | 2580600        |

**Standards**

| Description                                          | Volume                    | Concentration               | Product Number |
|------------------------------------------------------|---------------------------|-----------------------------|----------------|
| Chloride Standard Solution as Cl <sup>-</sup> (NIST) | 1 L                       | 100 mg/L Cl <sup>-</sup>    | 2370853        |
| Chloride Standard Solution as Cl <sup>-</sup> (NIST) | 500 mL                    | 1,000 mg/L Cl <sup>-</sup>  | 18349          |
| Chloride Standard Solution as Cl <sup>-</sup> (NIST) | 10 mL/16 Voluette Ampules | 12,500 mg/L Cl <sup>-</sup> | 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 |
|-------------------------------------------------------------|--------|----------|--------------------------------|-----------------------------------|---------------|---------|----------------|
| <b>ULTRA LOW RANGE</b>                                      |        |          |                                |                                   |               |         |                |
| <b>Total Chlorine Reagent Set</b>                           | 8370   |          | 2-500 µg/L Cl <sub>2</sub>     | 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        |
| <b>LOW RANGE</b>                                            |        |          |                                |                                   |               |         |                |
| <b>Total Chlorine Reagent Set, Rapid Liquid</b>             | 10060  |          | 0.02-2.00 mg/L Cl <sub>2</sub> | 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.





BEST VALUE!

## Reagents (Continued)

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

<sup>†</sup>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<br>Compliant | # Tests | Product<br>Number |
|------------------------------------------------------------------|--------|----------|-----------------------------------|---------------|------------------|---------|-------------------|
| <b>AMPEROMETRIC TITRATOR TITRATION</b>                           |        |          |                                   |               |                  |         |                   |
| (Back Titration for Total Chlorine)                              | 10025  |          |                                   |               |                  |         |                   |
| Acetate Buffer Solution, pH 4.0, w/ dropper, 100 mL              |        | S        | 0.0051-5.000 mg/L Cl <sub>2</sub> | AutoCAT™ 9000 | Yes              | 100     | 1490932           |
| Iodine Standard Solution, 0.0282 N, 1 L                          |        | S        | 0.0051-5.000 mg/L Cl <sub>2</sub> | AutoCAT™ 9000 | Yes              | 100     | 2333353           |
| Phenylarsine Oxide (PAO) Titrant, 0.00564 N, 1 L                 |        | S        | 0.0051-5.000 mg/L Cl <sub>2</sub> | AutoCAT™ 9000 | Yes              |         | 199953            |
| Phosphate Buffer Solution, pH 7.0, w/ dropper, 100 mL            |        | S        | 0.0051-5.000 mg/L Cl <sub>2</sub> | AutoCAT™ 9000 | Yes              | 100     | 2155332           |
| Potassium Iodide, SwifTest Refill                                |        |          | 0.0051-5.000 mg/L Cl <sub>2</sub> | AutoCAT™ 9000 | Yes              |         | 107760            |
| <b>AMPEROMETRIC TITRATOR TITRATION</b>                           |        |          |                                   |               |                  |         |                   |
| (Forward Titration for Total Chlorine)                           | 8168   |          |                                   |               |                  |         |                   |
| Acetate Buffer Solution, pH 4.0, w/ dropper, 100 mL              |        | S        | 0.0012-5.000 mg/L Cl <sub>2</sub> | AutoCAT™ 9000 | Yes              | 100     | 1490932           |
| Phenylarsine Oxide (PAO) Titrant, 0.00564 N, 1 L                 |        | S        | 0.0012-5.000 mg/L Cl <sub>2</sub> | AutoCAT™ 9000 | Yes              |         | 199953            |
| Potassium Iodide, SwifTest Refill                                |        |          | 0.0012-5.000 mg/L Cl <sub>2</sub> | AutoCAT™ 9000 | Yes              |         | 107760            |
| <b>AMPEROMETRIC DIGITAL TITRATOR TITRATION</b>                   |        |          |                                   |               |                  |         |                   |
| (Back Titration for Total Chlorine)                              | 10025  |          |                                   |               |                  |         |                   |
| Acetate Buffer Solution, pH 4.0, 100 mL                          |        | S        | 6 -1,000 µg/L Cl <sub>2</sub>     |               | Yes              | 100     | 1490932           |
| Potassium Iodide Powder Pillows                                  |        | PP       | 6 -1,000 µg/L Cl <sub>2</sub>     |               |                  | 100     | 107799            |
| Standard Iodine Titrant Solution Cartridge, 0.028 N              |        | DT       | 6 -1,000 µg/L Cl <sub>2</sub>     |               | Yes              |         | 2333301           |
| Sodium Thiosulfate Standard Solution, 0.00564 N, 100 mL          |        | S        | 6 -1,000 µg/L Cl <sub>2</sub>     |               | Yes              | 100     | 2408842           |
| <b>AMPEROMETRIC DIGITAL TITRATOR TITRATION</b>                   |        |          |                                   |               |                  |         |                   |
| (Forward Titration for Total Chlorine)                           | 10026  |          |                                   |               |                  |         |                   |
| Phenylarsine Oxide Solution, 0.00564 N CRTG                      |        | DT       | 15-1,000 µg/L Cl <sub>2</sub>     |               | Yes              |         | 199901            |
| Acetate Buffer Solution, pH 4.0, 100 mL                          |        | S        | 15-1,000 µg/L Cl <sub>2</sub>     |               | Yes              | 100     | 1490932           |
| Potassium Iodide Powder Pillows                                  |        | PP       | 15-1,000 µg/L Cl <sub>2</sub>     |               | Yes              | 100     | 107799            |
| <b>IODOMETRIC METHOD</b>                                         |        |          |                                   |               |                  |         |                   |
| (Using Sodium Thiosulfate)                                       |        |          |                                   |               |                  |         |                   |
| <b>Buret Titration</b>                                           |        |          |                                   |               |                  |         |                   |
|                                                                  | 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             |
| <b>DPD-FEAS</b>                                                  |        |          |                                   |               |                  |         |                   |
|                                                                  | 8210   |          |                                   |               |                  |         |                   |
| DPD Free Chlorine Powder Pillow                                  |        | PP       | 0-3.00 mg/L Cl <sub>2</sub>       |               |                  | 100     | 1407099           |
| DPD Total Chlorine Powder Pillow                                 |        | PP       | 0-3.00 mg/L Cl <sub>2</sub>       |               |                  | 100     | 1406499           |
| Ferrous Ethylenediammonium Sulfate (FEAS) Titration Cartridge    |        |          | 0-3.00 mg/L Cl <sub>2</sub>       |               |                  |         | 2292301           |
| Potassium Iodide solution, 30 g/L, 100 mL                        |        | S        |                                   |               |                  |         | 34332             |
| <b>DIGITAL TITRATOR TITRATION</b>                                |        |          |                                   |               |                  |         |                   |
|                                                                  | 8209   |          |                                   |               |                  |         |                   |
| <b>Total Chlorine Reagents</b> , Digital Titrator, Low Range     |        | DT       | 1-400 mg/L Cl <sub>2</sub>        |               |                  |         |                   |
| (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             |
| <b>Total Chlorine Reagent Set</b> , Digital Titrator, Mid Range  |        | DT       | 20-2,000 mg/L Cl <sub>2</sub>     |               |                  | 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             |
| <b>Total Chlorine Reagent Set</b> , Digital Titrator, High Range |        | DT       | 2,000-70,000 mg/L Cl <sub>2</sub> |               |                  | 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 Cl<sub>2</sub>, I<sub>2</sub> and Br<sub>2</sub> 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 |
|----------------------------------------------|----------|---------------------------------------------------------------------|-------------------------------|----------------|
| <b>LOW RANGE</b>                             |          |                                                                     |                               |                |
| Free & Total Chlorine Test Strips, Low Range | TS       | 0-10 mg/L Cl <sub>2</sub> (0, 0.5, 1, 2, 4, 10 steps)               | 50                            | 2745050        |
| Free & Total Chlorine Test Strips, Low Range | TS       | 0-10 mg/L Cl <sub>2</sub> (0, 0.5, 1, 2, 4, 10 steps)               | 250<br>(individually wrapped) | 2793944        |
| <b>HIGH RANGE</b>                            |          |                                                                     |                               |                |
| Free Chlorine Test Strips, High Range        | TS       | 0 to 600 mg/L Cl <sub>2</sub> (0, 25, 50, 100, 200, 400, 600 steps) | 100                           | 2890200        |

## Test Kits

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

## CHLORINE, SWIFTEST™ DISPENSER KITS

|                                        |      |    |                                                           |     |         |         |
|----------------------------------------|------|----|-----------------------------------------------------------|-----|---------|---------|
| Pocket Colorimeter™ II, Free Chlorine  | 8021 | SW | 0.02-2.00/0.1-8.0 mg/L Cl <sub>2</sub> 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 <sub>2</sub> Kit includes PC II | Yes | 125-250 | 5870024 |

<sup>†</sup>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 <sub>2</sub> | Includes values for all instruments                            | 2635300        |
| Spec✓ Gel Secondary Standard Kit-HR Chlorine, DPD    | Set of 4 Vials            | 0 - 8.0 mg/L Cl <sub>2</sub> | Includes values for all instruments, except DR/3000 and DR/700 | 2893300        |
| Chlorine Standard Solution as Cl <sub>2</sub> (NIST) | 2 mL/ 20 PourRite Ampules | 25-30 mg/L Cl <sub>2</sub>   |                                                                | 2630020        |
| Chlorine Standard Solution as Cl <sub>2</sub> (NIST) | 2 mL/ 20 PourRite Ampules | 50-75 mg/L Cl <sub>2</sub>   |                                                                | 1426820        |
| Chlorine Standard Solution as Cl <sub>2</sub> (NIST) | 10 mL/ 16 Volute Ampules  | 50-75 mg/L Cl <sub>2</sub>   |                                                                | 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 <sub>2</sub> , 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                                      |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|----------------------------|---------------------------------|--------------------------|---------------|------------------------------|-----------------------------------------------------|
| <b>COLORIMETRIC</b>                                                                                                                                                                                                                               |        |                            |                                 |                          |               |                              |                                                     |
| <b>Chlorine Dioxide Reagent Set</b> , Chlorophenol Red Method<br>Set includes:<br>(2) Chlorine Dioxide Reagent 1, 100 mL<br>(2) Chlorine Dioxide Reagent 2, 100 mL<br>(2) Chlorine Dioxide Reagent 3, 100 mL<br>(1) Dechlorinating Powder Pillows | 8065   | PP, S<br>S<br>S<br>S<br>PP | 0.01-1.00 mg/L ClO <sub>2</sub> | All except DR/800, PC II |               | 100<br>50<br>50<br>50<br>100 | 2242300<br>2070042<br>2070142<br>2070242<br>1436369 |
| <b>Chlorine Dioxide Reagent Set</b> , DPD /glycine method<br>Set includes:<br>(1) DPD Free Chlorine Powder Pillows<br>(1) Glycine Reagent, 29 mL                                                                                                  | 10126  | PP<br>PP<br>S              | 0.04-5.00 mg/L ClO <sub>2</sub> | All                      | Yes           | 100<br>100<br>100            | 2770900<br>2105569<br>2762133                       |
| <b>Chlorine Dioxide Reagent Set</b> , DPD /glycine method<br>Set includes:<br>(1) DPD Free Chlorine AccuVac® ampules<br>(1) Glycine Reagent, 29 mL                                                                                                | 10126  | AV<br>AV<br>S              | 0.04-5.00 mg/L ClO <sub>2</sub> | All                      | Yes           | 25<br>25<br>100              | 2771000<br>2502025<br>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 <sub>2</sub> | 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 <sub>2</sub> | 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 <sub>2</sub> | Kit includes PC II | Yes           | 100     | 5870051        |
| Chlorine Dioxide Test Kit (Model CLD-2), DPD Method   |        | CD       | 0.1-2 mg/L ClO <sub>2</sub>     |                    |               | 100     | 2842800        |

## Accessories Required to Run Tests

| Description                         | Product Number |
|-------------------------------------|----------------|
| <b>CHLOROPHENOL RED METHOD</b>      |                |
| 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.

