## Fluoride | Hardness



|    |  | Test System<br>(Detailed On Pages 6-7)   | Range/Sensitivity   | # of Test<br>(# Reagen         |                 | Shipping Code<br>(Weight/Lbs) |  |  |  |
|----|--|--|---|--------------------------------|-----------------|-------------------------------|--|--|--|
|    | <b>FLUORIDE</b> A red concentration.   | LUORIDE A red zirconium lake reacts with fluoride to form a colorless solution, which decreases the red color of the solution in proportion to oncentration.         |   |                                |                 |                               |  |  |  |
|    | 3243<br>DC1500-FL  | Colorimeter  | 0-2.0 ppm/0.03 ppm FI <sup>-</sup>  | 100 (2)                        | R-3243          | LQ (7+5)                      |  |  |  |
|    |  | RMALDEHYDE The colorimetric analysis uses a modified Schiff reaction in which an acidified pararosaniline and dichlorosulfitomercurate II mplex form a violet color. |   |                                |                 |                               |  |  |  |
|    | 6701-01  | Octa-Slide 2 Comparator  | 0.0, 0.5, 1.0, 2.0, 4.0, 6.0, 8.0, 10.0 ppm<br>Formaldehyde                                       | 100 (3)                        | R-6701-01       | LQ (2+5)                      |  |  |  |
|    | CLUTARALDEHYDE High concentrations are determined by a titration with sulfuric acid after reaction with sulfite.   |  |   |                                |                 |                               |  |  |  |
|    | 7064-01  | Direct Reading Titrator  | 1 mL = 250 ppm Glutaraldehyde   | 25 (5)                         | R-7064-01       | R2 (3)                        |  |  |  |
|    | <b>HARDNESS</b> EDTA titration is used for all hardness determinations, with a red to blue endpoint. Both total and calcium hardness buffers include inhibitors to eliminate metal interferences. All results are as CaCO <sub>3</sub> ; some kits also express results as gpg. The 3609, which is recommended for salt water analysis, includes a conversion factor for Ca++. The -LI suffix indicates an all liquid kit; -LT indicates a liquid buffer and tablet indicator. |  |   |                                |                 |                               |  |  |  |
| ij | 3609-01  | Fresh & Salt Water<br>Calcium Hardness<br>Direct Reading Titrator  | 0–200 ppm/4 ppm CaCO <sub>3</sub><br>0–2,500 ppm by dilution                                      | 50 (3)                         | R-3609-01       | R1 (1)                        |  |  |  |
|    | 4482-DR-LI-01  | Total Hardness<br>Direct Reading Titrator  | 0–200 ppm/4ppm CaCO <sub>3</sub><br>Liquid indicator  | 50 at 200 ppm (3)              | R-4482-DR-LI-01 | R1 (1)                        |  |  |  |
|    | 4482-LI-02   | Total Hardness<br>Dropper Bottle   | 1 drop = 10 ppm or 1 gpg $CaCO_3$ Liquid indicator  | 50 at 200 ppm<br>or 20 gpg (3) | R-4482-LI-02    | R1 (1)                        |  |  |  |
|    | 4482-DR-LT-01  | Total Hardness<br>Direct Reading Titrator  | 0-200 ppm/4 ppm CaCO <sub>3</sub><br>Tablet indicator   | 50 at 200 ppm (3)              | R-4482-DR-LT-01 | R1 (1)                        |  |  |  |
|    | 4824-LT-02   | Calcium, Magnesium, Tota<br>Hardness<br>Dropper Bottle   | al $1  \text{drop} = 10  \text{ppm}  \text{or}  1  \text{gpg}  \text{CaCO}_3$<br>Tablet indicator | 50 at 200 ppm<br>or 20 gpg (5) | R-4824-LT-02    | R1 (1)                        |  |  |  |
|    | 4824-DR-LT-01  | Calcium, Magnesium, Tota<br>Hardness<br>Direct Reading Titrator  | al 0–200 ppm/4 ppm CaCO <sub>3</sub><br>Tablet indicator  | 50 at 200 ppm (5)              | R-4824-DR-LT-01 | R1 (1)                        |  |  |  |
| Í  | 3037-DR-01   | Low Range Total Hardnes<br>Direct Reading Titrator   | s 0-10 ppm/0.2 ppm CaCO <sub>3</sub>  | 50 at 10 ppm (3)               | R-3037-DR-01    | R1 (1)                        |  |  |  |
|    | Hardness continued next page   |  |   |                                |                 |                               |  |  |  |

## Hardness | Iron

Hardness originally referred to the ability of water to lather with soap. The more calcium and magnesium ions present, the "harder" it was to produce a lather.



Code 4482-LI-02

| Order Code                 | Test System<br>(Detailed On Pages 6-7)  | Range/Sensitivity                               | # of Tests<br>(# Reagents) | Reagent Refill<br>Order Code | Shipping Code<br>(Weight/Lbs) |  |  |  |  |
|----------------------------|---|---|----------------------------|------------------------------|-------------------------------|--|--|--|--|
| HARDNESS                   | Continued   |   |                            |                              |                               |  |  |  |  |
| 7171-02                    | Total Hardness<br>Dropper Bottle  | 1 drop = 10, 25, or 50 ppm CaCO <sub>3</sub>    | 100 (3)                    | R- <b>7171-02</b>            | R1 (1)                        |  |  |  |  |
| 7246-02                    | Total Hardness<br>Dropper Bottle  | 1 drop = 2, 5, or 10 ppm $CaCO_3$               | 100 (3)                    | R- <b>7246-02</b>            | R1 (1)                        |  |  |  |  |
|                            | <b>OROGEN PEROXIDE</b> Although peroxide may be tested colorimetrically with DPD, the most common method is iodometric titration using a andard thiosulfate solution. Both methods are offered.   |   |                            |                              |                               |  |  |  |  |
| 7138-DB-<br>01             | lodometric<br>Dropper Bottle  | 1 drop = 5 ppm $H_2O_2$                         | 50 (4)                     | R- <b>7138-DB-01</b>         | LQ (2)                        |  |  |  |  |
| 7150-01                    | lodometric<br>Dropper Bottle  | 1 drop = $0.5\% \text{ H}_2\text{O}_2$          | 50 (4)                     | R- <b>7150-01</b>            | LQ (2)                        |  |  |  |  |
| 2984LR                     | Test Strips   | 0, 1, 3, 10, 30, 50                             | 25 (1)                     | R-2984LR-H                   | NH (1)                        |  |  |  |  |
| IODINE As v                | ODINE As with many other oxidizers, iodine may be titrated with a standard thiosulfate solution, hence the name iodometric titration.   |   |                            |                              |                               |  |  |  |  |
| 7253-DR-<br>01             | Direct Reading Titrator   | $0$ –50 ppm/1 ppm $I_2$                         | 50 at 50 ppm<br>(3)        | R- <b>7253-DR-01</b>         | R1 (1)                        |  |  |  |  |
| 7253-01                    | Dropper Pipet   | 1 drop = $2.5 \text{ ppm } I_2$                 | 100 at 25 ppm<br>(3)       | n R- <b>7253-DR-01</b>       | R1 (1)                        |  |  |  |  |
| 2948-BJ                    | Test Papers   | 12, 25, 50, 100 ppm l <sub>2</sub>              | 200                        | R-2948-BJ                    | NH (1)                        |  |  |  |  |
| IRON Bipyri<br>tested sepa | RON Bipyridyl is a ferrous iron indicator that tests total iron after any ferric iron is reduced to ferrous in the sample. Ferrous and ferric may be ested separately by eliminating the reduction step. A similar ferrous indicator, 1,10 phenanthroline, is used in the DC1500 kit. |   |                            |                              |                               |  |  |  |  |
| 7787-01                    | Total Iron<br>LRC Comparator  | 0.05, 0.10, 0.20, 0.30, 0.40, 0.60, 0.80, 1.0 p | pm Fe 30 (2)               | R- <b>7787-01</b>            | R1 (1)                        |  |  |  |  |
| 4447-01                    | Total Iron<br>Octa-Slide  | 0.5, 1.0, 2.0, 3.0, 4.0, 6.0, 8.0, 10.0 ppm Fe  | 90 (2)                     | R-3318                       | R1 (1)                        |  |  |  |  |
| 3347-01                    | Ferrous/Ferric Iron<br>Octa-Slide 2 Comparator  | 0.5, 1.0, 2.0, 3.0, 4.0, 6.0, 8.0, 10.0 ppm Fe  | 100 (3)                    | R-3347-01                    | R1 (1)                        |  |  |  |  |
| 3248<br>DC1500-FE          | Total Iron<br>1, 10 Phenanthroline<br>Colorimeter   | 0-4.0 ppm/0.25 ppm Fe                           | 100 (2)                    | R- <b>3681-01</b>            | R1 (1)                        |  |  |  |  |

Ship Codes: (NH) Non-Hazardous Material - No Fees · (R1) Small Qty. Hazardous Material - No Fees · (LQ, R2, R3) Hazardous Material - Air Fees Only · (HF) Hazardous Material - Air & Ground Fees \*(NPDWR) EPA Accepted · 1(NPDES) EPA Accepted · Direct Reading Titrators have a specific range, but may be refilled to test higher concentrations.