



## CHLORIDE TEST KIT

### DIRECT READING TITRATOR METHOD

### MODEL PSC-DR • CODE 4503-DR-01

QUANTITY	CONTENTS	CODE
15 mL	*Chloride Reagent #1	*4504-E
2 x 30 mL	*Chloride Reagent #2	*4505DR-G
15 mL	*Phenolphthalein Indicator, 1%	*2246-E
15 mL	*Sulfuric Acid, 0.5N	*6090-E
1	Test Tube, 5-10-15 mL, glass, w/cap	0778
1	Direct Reading Titrator, 0-200	0382

\*WARNING: Reagents marked with an \* are considered hazardous substances. To view or print a Material Safety Data Sheet (MSDS) for these reagents see MSDS CD or our web site. To obtain a printed copy, contact us by e-mail, phone or fax.

To order individual reagents or test kit components, use the specified code number.

Read Direct Reading Titrator Instruction Manual before proceeding. The Titrator is calibrated in parts per million (ppm) Chloride. Each minor division equals 4 ppm.

### PROCEDURE

1. Fill test tube (0778) to 15 mL line with sample water.
2. Add one drop of \*Phenolphthalein Indicator, 1% (2246). If solution remains colorless, proceed to Step 3. If solution turns a pink color, add \*Sulfuric Acid, 0.5N (6090) one drop at a time, mixing after each drop, until pink color disappears.
3. Add three drops of \*Chloride Reagent #1 (4504). Cap and swirl to mix. Solution will turn yellow.
4. Fill Direct Reading Titrator (0382) with \*Chloride Reagent #2 (4505DR). Insert Titrator in center hole of test tube cap.
5. While gently swirling tube, slowly press plunger to add \*Chloride Reagent #2, one drop at a time, until yellow color changes to orange-brown.

6. Read test result where plunger tip meets Titrator scale. Record as ppm Chloride.  
**EXAMPLE:** Plunger tip is 3 minor division below line 100. Test result is 100 plus (3 division x 4) equals 112 ppm.
7. If plunger tip reaches bottom line on Titrator scale (200 ppm) before endpoint color change occurs, refill Titrator and continue titration. When recording test result, be sure to include the original amount of reagent dispensed (200 ppm).
8. To convert to grains per gallon, multiply by 0.058. Record as gpg Chloride.  
$$\text{gpg Chloride} = \text{ppm Chloride} \times 0.058$$

## **HIGH CHLORIDE & SALINITY READINGS**

---

For high chloride and salinity readings the sample must be diluted to bring it within a practicable range for titration. Dilutions of 1 to 20 or 1 to 100 are recommended. For example: 1 mL of sample water is diluted to a total of 20 mL with distilled water. This is a 1 to 20 dilution. Fill the Titrator to the 15 mL line with the diluted sample. Proceed with Steps 2 -7 above. Multiply result by conversion factor below:

### **1 - 20 DILUTION**

---

$$\text{ppm Chloride} = \text{Titrator Reading} \times 20$$

$$\text{ppt Chloride} = \text{Titrator Reading} \times 0.02$$

$$\% \text{ Chloride} = \text{Titrator Reading} \times 0.002$$

### **1 - 100 DILUTION**

---

$$\text{ppm Chloride} = \text{Titrator Reading} \times 100$$

$$\text{ppt Chloride} = \text{Titrator Reading} \times 0.1$$

$$\% \text{ Chloride} = \text{Titrator Reading} \times 0.01$$

To convert parts per thousand (ppt) Chloride to parts per thousand (ppt) Salinity use the following formula:

$$\text{ppt Salinity} = (1.805 \times \text{ppt Chloride}) + 0.03$$

## **LaMOTTE COMPANY**

Helping People Solve Analytical Challenges®

PO Box 329 • Chestertown • Maryland • 21620 • USA  
800-344-3100 • 410-778-3100 (Outside USA) • Fax 410-778-6394

Visit us on the web at [www.lamotte.com](http://www.lamotte.com)