



CHLORIDE KIT

DIRECT READING TITRATOR, 0-200 ppm

CODE 4503-DR-02

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 to be potential health hazards. To view or print a Safety Data Sheet (SDS) for these reagents go to www.lamotte.com. Search the four digit reagent code number listed on the reagent label, in the contents list or in the test procedures. Omit any letter that follows or precedes the four digit code number. For example if code is 4450WT-H, search 4450. To obtain a printed copy, contact LaMotte by e-mail, phone or fax.

Emergency information for all LaMotte reagents is available from Chem-Tel:
(US, 1-800-255-3924)
(International, call collect, 813-248-0585)

Warning! This set contains chemicals that may be harmful if misused. Read cautions on individual containers carefully. Not to be used by children except under adult supervision.

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

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 directly from the scale where the large ring on the Titrator meets the Titrator barrel. 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 U.S.A.] · Fax 410-778-6394

Visit us on the web at www.lamotte.com