NSF L1 TITRATION TEST
FREE & COMBINED CHLORINE (1 mL = 5 ppm)

COMPONENTS:

1 x 5056	**Instruction**
1 x 9198	**Sample Tube, Graduated, 25 mL, w/cap, plastic**
or	
1 x 9058	**2000 Series Comparator**
1 x R-0003-A	**DPD Reagent #3, .75 oz, DB**
1 x R-0870-I	**DPD Powder, 10 g**
1 x R-0871-A	**FAS-DPD Titrating Reagent (chlorine), .75 oz, DB**
1 x 2271	**Black Cap**
1 x 6250	**Syringe Titrator**
1 x 6253	**Syringe Tip**

TO ORDER REPLACEMENT PARTS AND REAGENTS
CALL TOLL-FREE 800-TEST KIT (800-837-8548).

PROCEDURE:

CAREFULLY READ AND FOLLOW PRECAUTIONS ON REAGENT LABELS. KEEP REAGENTS AWAY FROM CHILDREN.

NOTE: Remove dropper tip and dropper cap from the R-0871 FAS-DPD Titrating Reagent (chlorine), and replace with the black cap.

Free & Combined Chlorine Tests

1. Rinse and fill sample tube (#9198) or large tube of comparator (#9058) to 25 mL mark with water to be tested.
2. Add 2 dippers R-0870 DPD Powder. Swirl until dissolved. Sample will turn pink (Fig. 1a or 1b) if free chlorine is present.

NOTE: If pink color disappears, add R-0870 DPD Powder until color turns pink.

3. Firmly attach the plastic tip onto the syringe. Draw up 1 milliliter (mL) of R-0871 FAS-DPD Titrating Reagent (chlorine), into the syringe, keeping the tip submerged the entire time. The seal of the plunger should be at the 1.0 mL mark (Fig. 2). **There will be air between the plunger and the titrant due to the plastic tip attachment. Do not attempt to remove the air**.
4. While gently swirling the sample tube, slowly dispense the R-0871 FAS-DPD Titrating Reagent (chlorine) with the syringe, until color changes from pink to colorless.

NOTE: For samples containing more than 5 ppm chlorine, refill the syringe and continue titrating until the pink color changes to colorless. Add 5 ppm chlorine to the results each time the syringe is refilled.

5. At endpoint, hold the syringe with tip facing up and read the location of the seal of the plunger (Fig. 3). Compare this syringe mark to the table below. **Record as parts per million (ppm) free chlorine (Cl_2)**.
6. Refill the syringe to the 1.0 mL mark as described in step 3.
7. Add 5 drops R-0003 DPD Reagent #3. Swirl to mix. Sample will turn pink if combined chlorine is present.
8. While gently swirling the sample tube, slowly dispense the R-0871 FAS-DPD Titrating Reagent (chlorine) with the syringe, until color changes from pink to colorless.
9. At endpoint, hold the syringe with tip facing up and read the location of the seal of the plunger. Compare this syringe mark to the table on the back. **Record as parts per million (ppm) combined chlorine (Cl_2)**.

NOTE: At completion of test, dispense remaining syringe solution. Discard syringe only after life of test kit.


Fig. 1a


Fig. 1b


Fig. 2

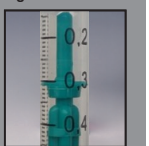

Fig. 3

NSF L1 TITRATION TEST
FREE & COMBINED CHLORINE (1 mL = 5 ppm)

Syringe Mark	ppm Chlorine	Syringe Mark	ppm Chlorine	Syringe Mark	ppm Chlorine
0.00	5.0	0.34	3.3	0.68	1.6
0.02	4.9	0.36	3.2	0.70	1.5
0.04	4.8	0.38	3.1	0.72	1.4
0.06	4.7	0.40	3.0	0.74	1.3
0.08	4.6	0.42	2.9	0.76	1.2
0.10	4.5	0.44	2.8	0.78	1.1
0.12	4.4	0.46	2.7	0.80	1.0
0.14	4.3	0.48	2.6	0.82	0.9
0.16	4.2	0.50	2.5	0.84	0.8
0.18	4.1	0.52	2.4	0.86	0.7
0.20	4.0	0.54	2.3	0.88	0.6
0.22	3.9	0.56	2.2	0.90	0.5
0.24	3.8	0.58	2.1	0.92	0.4
0.26	3.7	0.60	2.0	0.94	0.3
0.28	3.6	0.62	1.9	0.96	0.2
0.30	3.5	0.64	1.8	0.98	0.1
0.32	3.4	0.66	1.7		

NSF 50 Classification:

(FAS-DPD) Free Chlorine Syringe Method – L1 (Pool and Spa/Hot Tub)

(FAS-DPD) Combined Chlorine Syringe Method – L1 (Pool and Spa/Hot Tub)

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