

# Taylor's FAS-DPD Test Kits for Chlorine and Bromine

## INTRODUCTION

**H**eightedened concern about bacterial levels in cooling waters has resulted in increased applications of chlorine and bromine. Optimal control of these oxidizing biocides determines their effectiveness and the economy of the treatment program. To date, the DPD test (N,N-diethyl-p-phenylene-diamine) has been the most popular method for monitoring chlorine and bromine levels. The analyst matches the pink color that develops in the treated water sample when the oxidizer is present to a set of color standards, or uses an electronic colorimeter to make this reading.

**However, there is an excellent alternative available to industrial water treaters called FAS-DPD.** This non-instrument method doesn't require color matching. Ferrous ammonium sulfate is added drop by drop to a sample containing DPD indicator. The number of drops needed to turn the sample from pink to colorless is multiplied by the chosen drop equivalency to determine the concentration of the oxidizer.

The FAS-DPD method has several advantages. It's less expensive than using a meter. There's no waiting time for full color development. **The analyst does not have to be able to distinguish between gradations of color**—even a colorblind user can see the color change at the endpoint of the titration from a color to no color. It allows users to measure free and combined chlorine, as low as 0.2 ppm (with a 25 mL sample) and as high as 20 ppm (with a 10 mL sample); added together, this is the total chlorine concentration. Total bromine may be determined directly, as low as 0.5 ppm (with a 25 mL sample) and as high as 50 ppm (with a 10 mL sample).

Simple, fast, accurate, and inexpensive...four reasons why you should try the FAS-DPD method for monitoring oxidizing biocides in cooling waters!



With this titrimetric test, buffered DPD indicator powder is added to the cooling water sample. It reacts with any chlorine or bromine biocide present to produce the pink color characteristic of a standard DPD color-comparison test. FAS-DPD titrating reagent is then added dropwise until the color permanently disappears, signaling the endpoint. Even someone who has difficulty matching shades of red can see the change from pink to colorless (K-1515-C shown).

## FAS-DPD TEST KITS

### K-1515-C

Drop test (uses DPD #3);

1 drop = 0.2 or 0.5 ppm **free** or **combined** chlorine (Cl<sub>2</sub>)

### K-1516

Drop test (uses KI crystals);

1 drop = 0.2 or 0.5 ppm **free** or **combined** chlorine (Cl<sub>2</sub>)

### K-1517-C

Drop test;

1 drop = 0.5 or 1.25 ppm **total** bromine (Br<sub>2</sub>)



*the most trusted name in water testing*

**Taylor Technologies, Inc.**  
410-472-4340  
800-TEST KIT (837-8548)  
www.taylortechnologies.com

**ISO 9001:2008 Certified**

## USER BENEFITS


- Titrations do not require the ability to match colors, only the ability to see the **permanent color change** at the end-point of the reaction.
- These test kits are practical for both **on- and off-site** testing.
- Test kits **come complete** with all necessary reagents and equipment.
- **Waterproof instructions** are printed on plastic-impregnated paper that resists fading and tearing.
- **Picture guides** to color transitions in the test reassure new users.
- Custom-molded, durable plastic cases provide **safe storage** for all tests.
- **Proven chemistries** are based on *Standard Methods for the Examination of Water and Wastewater*, APHA, Washington, DC, and/or *American Society for Testing and Materials*, ASTM, Philadelphia, PA. Some methods use proprietary chemistry developed by Taylor Technologies.

## ALSO AVAILABLE

- Tests for **ozone** (K-1822); **hydrogen peroxide** (K-1443, K-1825, or K-1826); and **peracetic acid** (K-1546).
- SampleSizer® for 10/25 mL test volumes (#6190) and SpeedStir® magnetic stirrer (#9265) save time for frequent testers.
- A wide array of single- and multiparameter kits featuring color-matching and/or drop-count tests.
- Taylor's TTI® Colorimeter (M-3000); test 30+ parameters commonly encountered in commercial and industrial settings and transfer results to a PC database.
- Testing supplies and kit replacement parts (e.g., burets, flasks, test tubes, and test cells).
- Myron L Company portable instruments that may be purchased alone or paired with our reagents.
- **Video demonstrations** for new users posted on our website.
- Toll-free technical assistance at **800-TEST KIT**.

## REPRESENTATIVE TEST PROCEDURE

Reproduced from K-1515-C instruction:

DROP TEST		Instr. #5216
FREE & COMBINED CHLORINE (1 drop = 0.2 or 0.5 ppm)		
<b>COMPONENTS:</b> 1 x 5216 Instruction 1 x 9198Y Sample Tube, Graduated (25 mL) w/ cap & yellow dot, plastic 1 x R-0003-C DPD Reagent #3, 2 oz, DB 1 x R-0870-I DPD Powder, 10 g 1 x R-0871-C FAS-DPD Titrating Reagent (chlorine), 2 oz, DB	3. Add R-0871 FAS-DPD Titrating Reagent (chlorine) dropwise, swirling and counting after each drop, until color changes from pink to colorless.	 Fig. 1
<b>TO ORDER REPLACEMENT PARTS AND REAGENTS CALL TOLL-FREE 800-TEST KIT (800-837-8548).</b>	4. Multiply drops in Step 3 by drop equivalence (Step 1). Record as parts per million (ppm) free chlorine (Cl <sub>2</sub> ).	
<b>PROCEDURE:</b> <b>CAREFULLY READ AND FOLLOW PRECAUTIONS ON REAGENT LABELS. KEEP REAGENTS AWAY FROM CHILDREN.</b>	5. Add 5 drops R-0003 DPD Reagent #3. Swirl to mix. Sample will turn pink (Fig. 1) if combined chlorine is present.	
<b>NOTE:</b> When dispensing reagents from dropper bottles, <b>always</b> hold bottle in a vertical position.	6. Add R-0871 FAS-DPD Titrating Reagent (chlorine) dropwise, swirling and counting after each drop, until color changes from pink to colorless.	
<b>Free &amp; Combined Chlorine Tests</b> 1. Rinse and fill sample tube (#9198Y) to desired mark with water to be tested.	7. Multiply drops in Step 6 by drop equivalence (Step 1). Record as parts per million (ppm) combined chlorine (Cl <sub>2</sub> ).	
<b>NOTE:</b> For 1 drop = 0.2 ppm, use 25 mL sample. For 1 drop = 0.5 ppm, use 10 mL sample.		
2. Add 2 dippers R-0870 DPD Powder. Swirl until dissolved. Sample will turn pink (Fig. 1) if free chlorine is present.		
<b>NOTE:</b> If pink color disappears, add R-0870 DPD Powder until color turns pink.		



31 Loveton Circle, Sparks, MD 21152 USA  
800-TEST KIT (837-8548) • 410-472-4340

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