

Taylor's Solution to Potassium Monopersulfate Interference

INTRODUCTION

Potassium monopersulfate (such as Dupont's Oxone®) is widely used in chlorine-sanitized pools and spas to reduce the load of organic contaminants, thereby making more of the chlorine available for disinfection. While it is a quick and effective cleansing agent, **this oxidizer has one drawback: It interferes with both DPD (liquid and tablet) and FAS-DPD chlorine tests that employ DPD Reagent #3.** Some pools even have been closed because of high combined chlorine (chloramine) readings when, in fact, the high readings were the result of interference from the monopersulfate shock treatment used. For this reason, regulatory authorities need to be aware of monopersulfate interference when conducting their inspections.

Conversely, **chlorine will interfere with most tests for potassium monopersulfate**, since both are strong oxidizers. Pools utilizing certain alternative sanitizers, such as mineral purification systems, rely on monopersulfate to destroy organic contaminants, but even the low residual of chlorine maintained in these pools makes getting a true monopersulfate reading problematic.

A solution is now at hand. In cooperation with DuPont, Taylor has developed a method to distinguish between the levels of free chlorine, combined chlorine, and the monopersulfate compound in the water. Taylor's drop-test kit K-1518 contains **Deox Reagent** to eliminate monopersulfate interference in the chlorine test. It employs FAS-DPD to determine free and combined chlorine levels. Using this product, pool managers, service technicians, and homeowners can also monitor the level of potassium monopersulfate in the water with confidence.

Alternatively, analysts using a number of combination kits may add Deox Reagent to their existing setup to eliminate interference from monopersulfate when testing chlorine. See chart on reverse. **Deox Reagent will work with these Taylor liquid DPD and FAS-DPD tests containing DPD #3.**

DEOX PRODUCTS

K-1518

Drop tests measuring free & combined chlorine & monopersulfate; 1 drop = 0.2 ppm chlorine/1 drop = 0.2 ppm monopersulfate compound as chlorine (Cl₂); 2 oz. bottles

K-1520

Deox Reagent supplement for Residential™ test kits (K-1004 and K-1005) to eliminate interference from monopersulfate in the chlorine test; .75 oz. bottles



Taylor's K-1518 drop-test kit was developed in concert with DuPont to measure free and combined chlorine accurately in the presence of monopersulfate shocking agents.

K-2041

Deox Reagent supplement for 2000 Series™ kits to eliminate interference from monopersulfate in the chlorine test; .75 oz. bottles

K-2042

Deox Reagent supplement for 2000 Series kits to eliminate interference from monopersulfate in the chlorine test; 2 oz. bottles

USER BENEFITS

- **Eliminates false chlorine readings** due to interference by potassium monopersulfate.
- The level of potassium monopersulfate can **itself** be monitored with accuracy using the K-1518.
- Drop tests utilize a color change to signal the endpoint—**no need to use complicated formulas** to determine final values.
- All **fully portable** for field testing.
- Instructions are printed on waterproof, plastic-impregnated paper that **resists fading and tearing**.
- The K-1518's custom-molded plastic case provides **safe storage**.
- **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

- Complementary combination test kits with either .75 oz. or 2 oz. bottles of reagents.
- Individual replacement reagents.
- Other testing supplies and replacement parts (e.g., burets, flasks, test tubes, and test cells).
- Toll-free technical assistance at **800-TEST KIT**.
- Computerized water analysis at www.taylor technologies.com under Resource Center/*sureTREAT*.

REPRESENTATIVE TEST PROCEDURE

Reproduced from K-1518 instruction:

<p style="text-align: center;">DROP TEST FREE & COMBINED CHLORINE (1 drop = 0.2 ppm) MONOPERSULFATE COMPOUND (1 drop = 0.2 ppm)</p> <p>COMPONENTS: 1 x 4030 Pipet, Calibrated (0.5 & 1.0 mL) w/ cap, plastic 1 x 5806 Instruction 1 x 9198 Sample Tube, Graduated (25 mL) w/ cap, plastic 1 x R-0003-C DPD Reagent #3, 2 oz, DB 1 x R-0867-C Deox Reagent, 2 oz 1 x R-0870-I DPD Powder, 10 g 1 x R-0871-C FAS-DPD Titrating Reagent (chlorine), 2oz, DB</p> <p style="text-align: center;">TO ORDER REPLACEMENT PARTS AND REAGENTS CALL TOLL-FREE 800-TEST KIT (800-837-8548).</p> <p>PROCEDURE: CAREFULLY READ AND FOLLOW PRECAUTIONS ON ALL REAGENT LABELS. KEEP REAGENTS AWAY FROM CHILDREN.</p> <p>NOTE: This procedure will selectively determine free chlorine, combined chlorine, and monopersulfate (not persulfate). To determine monopersulfate it is first necessary to determine both free and combined chlorine, if present.</p> <p>NOTE: When dispensing reagents from dropper bottles, always hold bottle in a vertical position.</p> <p>Free & Combined Chlorine Test</p> <ol style="list-style-type: none"> 1. Rinse and fill 25 mL sample tube (#9198) to 25 mL mark with water to be tested. 2. Add 1 heaping dipper R-0870 DPD Powder and QUICKLY swirl to mix. IMMEDIATELY add 1.0 mL R-0867 Deox Reagent and QUICKLY swirl to mix. Sample will turn pink if free chlorine (FC) is present. 	<p style="text-align: right;">Instr. #5806</p> <ol style="list-style-type: none"> 3. Add R-0871 FAS-DPD Titrating Reagent (chlorine) dropwise, swirling and counting after each drop, until color changes from pink to colorless. Number of drops is Reading A. IMMEDIATELY add 10 drops R-0003 DPD Reagent #3. Swirl to mix. WAIT 1 MINUTE. Sample will turn pink if combined chlorine (CC) is present. 4. Add R-0871 FAS-DPD Titrating Reagent (chlorine) dropwise, swirling and counting after each drop, until color changes from pink to colorless. Number of drops is Reading B. 5. Multiply Reading A by 0.2. Record as parts per million (ppm) free chlorine (FC). Multiply Reading B by 0.2. Record as ppm combined chlorine (CC). <p>Monopersulfate Compound Test</p> <ol style="list-style-type: none"> 1. Rinse and fill 25 mL sample tube (#9198) to 25 mL mark with water to be tested. 2. Add 1 heaping dipper R-0870 DPD Powder. Swirl until dissolved. 3. Add 10 drops R-0003 DPD Reagent #3. Swirl to mix. WAIT 1 MINUTE. 4. Add R-0871 FAS-DPD Titrating Reagent (chlorine) dropwise, swirling and counting after each drop, until color changes from pink to colorless. 5. Multiply drops of R-0871 FAS-DPD Titrating Reagent by 0.2. Record as parts per million (ppm) total oxidizer (TO). 6. To calculate parts per million (ppm) monopersulfate compound (MC) as chlorine (Cl₂): Formula: TO - (FC + CC) = MC. <p>NOTE: A negative value for MC may be obtained when MC is zero (0) or very low (0-0.4 ppm as chlorine). This is caused by variables such as sample measurement, drop variation, etc.</p> <p>NOTE: Refer to manufacturer's instructions for proper monopersulfate adjustment.</p>
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SELECTION GUIDE

Kits...	Use ▶	K-1520 (.75 oz.)	K-2041 (.75 oz.)	K-2042 (2 oz.)
K-1004		•		
K-1005		•		
K-1515-A			•	
K-1515-C				•
K-2000			•	
K-2005 & K-2005-SALT			•	
K-2005C & K-2005C-SALT				•
K-2006 & K-2006-SALT			•	
K-2006C & K-2006C-SALT				•
K-2007				•
K-2007C			•	
K-2009			•	
K-2015			•	
K-2100			•	
K-2105			•	
K-2105C				•
K-2106			•	