

Taylor's Orthophosphate Test Kits



Tests utilizing the stannous chloride method for orthophosphate can be purchased as a stand-alone kit (K-1831 shown) or in combination with other boiler water tests.

INTRODUCTION

Phosphate occurs naturally in water, sediments, and biological sludges at low concentrations. Environmental problems result from enrichments that are primarily caused by fertilizer runoff, biological wastes and residues, discharges of detergents and surfactants, and industrial effluents. The only kind of phosphate that can be determined directly without preliminary hydrolysis or oxidative digestion of the water sample is called **orthophosphate**, which exists in filterable and particulate form.

In boiler water treatment chemicals, orthophosphate is primarily added to **control scaling**, since it reacts with calcium hardness to form a more fluid sludge, such as calcium phosphate; orthophosphate also provides good **corrosion inhibition**.

Concentrations may be determined colorimetrically using the stannous chloride method. With the stannous chloride method, samples should be filtered before testing; also fluoride, sulfide, and high levels of silica or ferrous iron will interfere.

These test kits are practical for both **on- and off-site** testing.

ORTHOPHOSPHATE KITS

K-1100

Slide comparator (stannous chloride method);
5, 10, 20, 30, 40, 50, 60, 80, 100 ppm PO₄

K-1831

2-Standard comparator (stannous chloride method);
30 & 60 ppm PO₄



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

- Slide™ comparators (using nine liquid-color standards molded in impact-resistant plastic) are **designed to compensate for color and turbidity**. 2-Standard™ comparators (using two liquid-color standards) are appropriate when the treatment only needs to be controlled between **an established minimum and maximum concentration**.
- **Waterproof instructions** are printed on plastic-impregnated paper that resists fading and tearing.
- 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

- Kits for testing **phosphonate** and **polyphosphate** levels.
- 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.
- Myron L Company portable instruments and calibration solutions (sold separately in reagent packs).
- Testing supplies and kit replacement parts (e.g., burets, flasks, test tubes, and test cells).
- Toll-free technical assistance at **800-TEST KIT**.

REPRESENTATIVE TEST PROCEDURE

Reproduced from K-1100 instruction:

COLOR COMPARISON TEST ORTHOPHOSPHATE (5-100 ppm)

COMPONENTS:

1 x 2269	Cap, Dispenser, 18 mm, natural (or #2280, 28 mm, white)
5 x 4023	Test Tube, Calibrated (5 mL), glass
1 x 4027	Funnel, 58 mm, plastic
1 x 5160	Instruction
1 x 6003	Brush, Test Tube
1 x 6009	Filter Paper, 9.0 cm, #610, 100/box
2 x 9021	Test Tube, Mixing, Calibrated (5, 10, 14, 15, 17.5 mL), glass w/ stopper
1 x 9110	Slide Comparator, Orthophosphate, Stannous Chloride, 5-100 ppm
1 x 9190	Base, Slide Comparator (for test tubes)
1 x R-0601-C	Molybdate Reagent*, 2 oz (or R-0601-E, 16 oz)
1 x R-0602P-I	Stannous Chloride Powder, 10 g

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.

Orthophosphate Test

1. Filter water to be tested to clarify.
2. Rinse and fill one mixing test tube (#9021) to 5 mL mark with filtered sample.
3. Dilute to 15 mL mark with distilled or deionized water. Stopper and mix. Remove stopper. Transfer to two 5 mL test tubes (#4023) to 5 mL mark.
4. Wipe dry and place in two holes adjacent to center hole of comparator base (#9190).

Instr. #5160

5. Rinse and fill second mixing test tube (#9021) to 5 mL mark with filtered sample.
6. Cap R-0601 Molybdate Reagent with dispenser cap (#2269 or #2280). Add R-0601 Molybdate Reagent to 15 mL mark. Stopper and mix. Remove stopper.
7. Add 2 level dippers R-0602P Stannous Chloride Powder. Stopper and mix.
8. Wipe dry and place in center hole of comparator base (#9190). WAIT 1 MINUTE. Read before 5 minutes.
9. Place Slide on comparator base. Match color in center test tube with a color standard. The Slide is in proper alignment for a color match when a white line on the Slide is directly above the white line on the comparator base. Record as parts per million (ppm) orthophosphate (PO_4^{3-}).

NOTE: If sample color matches or is deeper than highest color standard: Dilute sample with distilled, deionized, or phosphate-free water. Repeat test. For sample diluted with 1 part water, multiply reading by 2; for 2 parts, multiply by 3, etc.

*WARNING: Molybdate Reagent (R-0601) contains 5-10% (w/w) sulfuric acid, a corrosive acid.



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

7/17