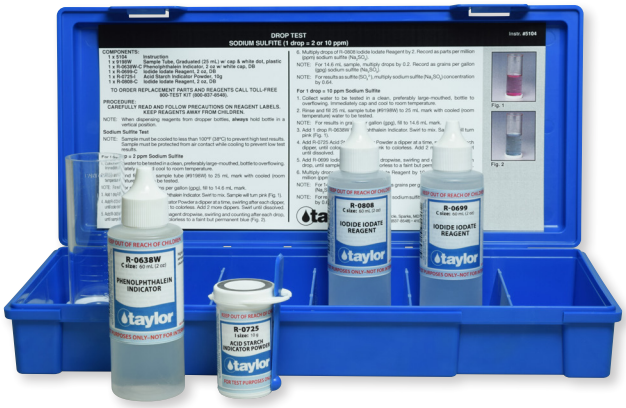
Taylor's Sulfite Test Kit

INTRODUCTION

Because it readily reacts with oxygen to form sulfate, sulfite is not usually found in natural water systems. In its most common form, **sodium sulfite**, it is widely used as an oxygen scavenger in feedwater conditioning to prevent pitting in boilers; as a pulping or pulp-bleaching agent by the paper industry; to neutralize residual chlorine in potable water, sewage, industrial effluents, and textile process waters; and as a reducing agent in still other manufacturing processes.

Sample water **over 100°F** will cause a false-high reading; therefore, quickly cool to room temperature before testing. To prevent a false-low reading caused by the reaction between sulfite and ambient air or dissolved oxygen, **water samples should be capped while cooling and then tested without delay**. An iodometric drop test is the most popular field method for determining sodium sulfite concentrations.

Note: Sulfide and ferrous iron cause positive interference; copper and nitrite cause negative interference.



The K-1529 test for sodium sulfite offers two drop equivalencies for flexibility.

SULFITE KIT

K-1529
Drop test (iodometric method);
1 drop = 2 or 10 ppm Na_2SO_3

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.
- **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

- Several **combination kits for monitoring boiler and cooling waters** with the sodium sulfite drop test: K-1640, K-1645, K-1645-1, K-1645-3, K-1645-5, K-1645-6, K-1680, and K-1683.
- Myron L Company portable instruments and calibration solutions (sold separately in reagent packs).
- 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).
- Toll-free technical assistance at **800-TEST KIT**.

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Taylor Technologies, Inc.
410-472-4340
800-TEST KIT (837-8548)
www.taylortechnologies.com
ISO 9001:2008 Certified

REPRESENTATIVE TEST PROCEDURE

Reproduced from K-1529 instruction:

DROP TEST
SODIUM SULFITE (1 drop = 2 or 10 ppm)

Instr. #5104

COMPONENTS:

1 x 5104	**Instruction**
1 x 9198W	**Sample Tube, Graduated (25 mL) w/ cap & white dot, plastic**
1 x R-0638W-C	**Phenolphthalein Indicator, 2 oz w/ white cap, DB**
1 x R-0699-C	**Iodide Iodate Reagent, 2 oz, DB**
1 x R-0725-I	**Acid Starch Indicator Powder, 10g**
1 x R-0808-C	**Iodide Iodate Reagent, 2 oz, DB**

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: When dispensing reagents from dropper bottles, **always** hold bottle in a vertical position.

Sodium Sulfite Test

NOTE: Sample must be cooled to less than 100°F (38°C) to prevent high test results. Sample must be protected from air contact while cooling to prevent low test results.

For 1 drop = 2 ppm Sodium Sulfite

1. Collect water to be tested in a clean, preferably large-mouthed, bottle to overflowing. Immediately cap and cool to room temperature.
2. Rinse and fill 25 mL sample tube (#9198W) to 25 mL mark with cooled (room temperature) water to be tested.

NOTE: For results in grains per gallon (gpg), fill to 14.6 mL mark.

3. Add 1 drop R-0638W Phenolphthalein Indicator. Swirl to mix. Sample will turn pink (Fig. 1).
4. Add R-0725 Acid Starch Indicator Powder a dipper at a time, swirling after each dipper, until color changes from pink to colorless. Add 2 more dippers. Swirl until dissolved.
5. Add R-0808 Iodide Iodate Reagent dropwise, swirling and counting after each drop, until sample changes from colorless to a faint but permanent blue (Fig. 2).
6. Multiply drops of R-0808 Iodide Iodate Reagent by 2. Record as parts per million (ppm) sodium sulfite (Na_2SO_3).

NOTE: For 14.6 mL sample, multiply drops by 0.2. Record as grains per gallon (gpg) sodium sulfite (Na_2SO_3).

NOTE: For results as sulfite (SO_3^{2-}), multiply sodium sulfite (Na_2SO_3) concentration by 0.64.

For 1 drop = 10 ppm Sodium Sulfite

1. Collect water to be tested in a clean, preferably large-mouthed, bottle to overflowing. Immediately cap and cool to room temperature.
2. Rinse and fill 25 mL sample tube (#9198W) to 25 mL mark with cooled (room temperature) water to be tested.

NOTE: For results in grains per gallon (gpg), fill to 14.6 mL mark.

3. Add 1 drop R-0638W Phenolphthalein Indicator. Swirl to mix. Sample will turn pink (Fig. 1).
4. Add R-0725 Acid Starch Indicator Powder a dipper at a time, swirling after each dipper, until color changes from pink to colorless. Add 2 more dippers. Swirl until dissolved.
5. Add R-0699 Iodide Iodate Reagent dropwise, swirling and counting after each drop, until sample changes from colorless to a faint but permanent blue (Fig. 2).
6. Multiply drops of R-0699 Iodide Iodate Reagent by 10. Record as parts per million (ppm) sodium sulfite (Na_2SO_3).

NOTE: For 14.6 mL sample, record drops as grains per gallon (gpg) sodium sulfite (Na_2SO_3).

NOTE: For results as sulfite (SO_3^{2-}), multiply sodium sulfite (Na_2SO_3) concentration by 0.64.

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Fig. 1

Fig. 2