Determination of Tetrakishydroxymethyl Phosphonium Sulfate (THPS) in Tolcide® PS Biocides

CODE 4-8776-01

QUANTITY	CONTENTS	CODE
120 mL	*DSP Reagent, 10% Solution	*4133-J
120 mL	*Borate Buffer Solution	*4135-J
120 mL	*PSSA Reagent, 5% Solution	*4134-J
30 mL	Starch Indicator Solution	4170WT-G
60 mL	*Iodine Solution, 0.025N	*6377-H
15 mL	*Zinc Acetate, 2N	*3843-E
1	Test Tube, plastic, 5-10-25 mL, w/cap	0715
3	Pipets, 1 mL, plastic	0354
1	Direct Reading Titrator, 0 - 100 Range	0381
1	Dispenser Cap	0601

*WARNING: Reagents marked with a * are considered hazardous substances. To view or print a Material Safety Data Sheet (MSDS) for these reagents see MSDS CD or our website. To obtain a printed copy, contact us by e-mail, phone or fax.

To order individual reagents or test kit components, use the specified code number.

INTERFERENCES: Hydrogen sulfide can interfere with the determination of THPS. Pretreatment with zinc acetate will remove the interference. Add 5 drops of *Zinc Acetate, 2N (3843) for every 100 ppm hydrogen sulfide present in a 50 mL sample. Filter off the white precipitate that forms and proceed with Steps 1-11 using the filtrate.

PROCEDURE

1. Fill the test tube (0715) to the 25 mL line with the sample to be tested.
2. For fresh water samples, use a 1 mL pipet (0354) to add 2.0 mL *DSP Reagent, 10% Solution (4133). For saltwater samples, use a 1mL pipet (0354) to add 2.0 mL *Borate Buffer Solution (4135).
3. Use another 1 mL pipet (0354) to add 2.0 mL of PSSA Reagent, 5% Solution (4134). Swirl to mix.
4. Add 6 drops of Starch Indicator Solution (4170WT). Swirl to mix.
5. Replace the regular cap on the bottle of *Iodine Solution, 0.025N (6377) with the special dispenser cap (0601).

   NOTE: Replace the regular cap on the Iodine Solution 0.025N bottle for storage.
6. Fill the Direct Reading Titrator (0381) with the *Iodine Solution, 0.025N (6377).
7. Slowly add *Iodine Solution, 0.025N (6377) to the test tube by depressing the plunger. Swirl the test tube after each drop to mix reagents.
8. Continue adding *Iodine Solution, 0.025N (6377) until 1 drop results in a pale blue color that lasts 20 seconds..
9. Read the concentration (in ppm) of THPS directly from the scale where the large ring on the Titrator meets the Titrator barrel.

   NOTE: Read the test result where the large ring on the Titrator meets the Titrator barrel. Each small division is equal to 2 ppm.
10. Repeat Steps 1-9 on a blank (system water without biocide) to determine background levels.
11. Subtract the blank reading from the reacted sample reading to determine the concentration of THPS in the sample.

    NOTE: This test measures ppm active THPS. To obtain ppm of formulation, divide ppm THPS by the activity (in percent) of the formulation, and multiply by 100.

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