

# DETERMINATION OF TETRAKISHYDROCYMETHYL PHOSPHONIUM SULFATE [THPS] IN TOLCIDE® PS BIOCIDES

Code 4-8776-01



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QUANTITY	CONTENTS	CODE
120 mL	DSP Reagent, 10% Solution	4133-J
120 mL	Borate Buffer Solution	4135-J
120 mL	PSSA 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, 5-10-15-20-25-30 mL, w/cap	0715
3	Pipets, 1 mL, plastic	0354
1	Direct Reading Titrator, 0-100 Range	0381
1	Dispenser Cap	0601

\*Reagent is a potential health hazard. **READ SDS:** lamotte.com

**Emergency information:**  
Chem-Tel USA 1-800-255-3924  
Int'l, call collect, 813-248-0585



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 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.

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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.