

Azole 25

Range(s): 0-25.0 ppm Tolyltriazole, 0-25.0 ppm Benzotriazole



Procedure

Note: **IMPORTANT** – Carefully read the User's Guide and safety information included with the SteriPEN before using.

Note: Glassware that has not been properly cleaned may contaminate the sample and affect test results. Clean glassware thoroughly before use with phosphate-free detergent (available at local stores); then rinse with Hydrochloric Acid 3N (R-0737) followed by DI Water (R-0833) or sample water.

1. Turn on the Colorimeter.
2. Select a test menu (ALL TESTS, RECENT TESTS, or FAVORITES) containing Azole 25 using ◀▶.
3. Select Azole 25 using ▲▼; then press ENTER ●.
4. Select a chemical form (Tolyltriazole or Benzotriazole) for expression of test results using ▲▼.
5. Rinse and fill a 25 mm sample cell to 10 mL mark with sample; then cap and set aside. (This will be the blank.)

Note: For turbid samples, fill 25 mm sample cell to 15 mL mark with sample. Add 0.5 mL Azole 25 - Reagent A to the sample; then cap, swirl to mix, and set aside. (This will be the blank.)

6. Rinse and fill 50 mL dilution vial (part #6551) to 30 mL mark with sample water.
7. Place SpinVane® stirring bar (part #6657) in dilution vial and place on the SpeedStir® (part #6100).
8. Press the power button.
9. Add 1 mL Azole 25 - Reagent A to the sample in the dilution vial.
10. Using the .15 g dipper spoon, add 1 level dipper Azole 25 - Reagent B to the sample in the dilution vial. Allow sample to stir until all powder is dissolved.
11. Remove lamp cover from SteriPEN UV Light (part #6656-RC).
12. Activate SteriPEN for a 90-second (1 L) UV treatment. See SteriPEN User's Guide.
13. Insert SteriPEN into the sample. When the sensing pins reach the sample, the UV light will automatically turn on. The UV light automatically turns off after each treatment.
14. The sample must be stirred continuously during the UV treatment.

Note: SpeedStir automatically shuts off after 4 ½ minutes. To restart press the power button.

15. After the UV treatment, remove SteriPEN from sample.
16. Shake off the SteriPEN to remove water from the sensing pins, or blot dry with a soft, lint-free cloth.
17. Repeat steps 12-14.
18. After completing two, 90-second UV treatments, remove SteriPEN from the sample. Clean the lamp and sensing pins; then dry with a soft, lint-free cloth. Replace lamp cover.
19. Rinse and fill a second clean 25 mm sample cell to 10 mL mark with the UV-treated sample. (This will be the prepared sample.)
20. Insert blank sample cell into sample cell compartment. Align marks per User's Manual.
21. Select ZERO using ◀▶; then press ENTER ●. Zero will be displayed.
22. Remove blank sample cell from sample cell compartment.
23. Insert the second sample cell into sample cell compartment. Align marks.
24. Select READ using ◀▶; then press ENTER ●. The instrument will read the sample and the result will be displayed.

Interferences

Alkalinity, Total (CaCO_3) > 1000 ppm – negative interference

To remove interference: Fill sample tube (part #9188) to 50 mL mark and adjust pH to 4-6 with Hydrochloric Acid 3N (R-0737). Take a 30 mL portion and follow test procedure above.

Iron, Ferric > 25 ppm – positive interference

Nitrate > 2000 ppm – negative interference

Oxidizers, all levels – positive interference

Zinc > 80 ppm – negative interference

The following analytes were tested to the levels listed below and found not to cause any interference up to the specified values:

Alum – 740 ppm

Borate (B_4O_7) – 4000 ppm

Bromine – 20 ppm

Chloride – 1000 ppm

Chlorine – 20 ppm

Chromate – 15 ppm

Copper – 20 ppm

Fluoride – 10 ppm

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Hardness, Calcium (CaCO_3) – 1000 ppm

Hardness, Magnesium (CaCO_3) – 400 ppm

Molybdate – 250 ppm

Nitrite – 4000 ppm

Phosphate – 100 ppm

Phosphonate – 100 ppm

Polymer (PAA) – 1000 ppm

Polyphosphate (PO_4) – 5 ppm

Silica – 150 ppm

Sulfate – 1000 ppm

Sulfite – 100 ppm

Test Method

Bisulfite-UV Oxidation

In the presence of bisulfite and UV radiation, azoles form a yellow-colored complex proportional to the concentration of azole in a sample.

Estimated Detection Limit

0.6 ppm Tolyltriazole or Benzotriazole

Precision

Using two lots of reagent, a 15.0 ppm Tolyltriazole standard and a 15.0 ppm Benzotriazole standard, an individual analyst obtained a standard deviation of ± 0.4 ppm Tolyltriazole and Benzotriazole.

Application

Industrial Water

Ordering Info

Reagent Pack

K-8033 Azole 25

Formulated for exclusive use with Taylor's TTI® Colorimeter.

Reagent Pack Components

R-8033A Azole 25 - Reagent A

R-8033B Azole 25 - Reagent B

Required Accessories

#6100* Magnetic Stirrer, SpeedStir®

#6382* Batteries, AA (lithium), 4-count

#6551** Vial, Dilution (50 mL), w/ cap

#6656-RC* UV Light, SteriPEN®, Rechargeable

#6657* Stirring Bar, SpinVane®

Optional Reagents

R-0737 Hydrochloric Acid 3N

R-0833 DI Water

Optional Accessories

#9188 Sample Tube, Graduated (50 mL) w/ cap, plastic

* Included in K-8033-AC

** Included with M-3000

