Benzotriazole/Tolyltriazole Test Kit

TZ-1 (2167500, 2167502 and 2167570) DOC326.98.00039

Test preparation

WARNING: ⚠ Ultraviolet (UV) light exposure hazard. Exposure to UV light can cause eye and skin damage. Protect eyes and skin from direct exposure to UV light.

WARNING: ⚠ Electrical shock hazard. Always unplug the unit when disconnecting or connecting the lamp.

CAUTION: ⚠ Review the Safety Data Sheets (MSDS/SDS) for the chemicals that are used. Use the recommended personal protective equipment.

- Put the color disc on the center pin in the color comparator box (numbers to the front).
- Make sure to use the applicable color disc for benzotriazole or tolyltriazole. The test procedure cannot tell the difference between benzotriazole and tolyltriazole.
- Use sunlight or a lamp as a light source to find the color match with the color comparator box.
- Rinse the tubes and bottles with sample before the test. Rinse the tubes and bottles with deionized water after the test.
- If the color match is between two segments, use the value that is in the middle of the two segments.
- If the color disc becomes wet internally, pull apart the flat plastic sides to open the color disc. Remove the thin inner disc. Dry all parts with a soft cloth. Assemble when fully dry.
- Undissolved reagent does not have an effect on test accuracy.
- Do not touch the UV lamp surface with bare fingers. Fingerprints can damage the glass. Rinse the lamp and wipe with a soft, clean tissue between tests.
- The recommended sample temperature is 20–25 °C (68–78 °F).
- Make sure that the UV digestion time is 5 minutes. If the UV digestion time is more or less than 5 minutes, results will be lower than actual.

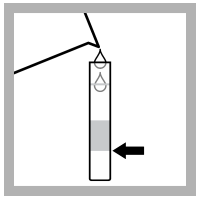
Replacement items

Description	Unit	Item no.
Triazole Reagent Powder Pillows	100/pkg	2141299
Bottle, square, with 25-mL mark	each	1704200
Bottle holder	each	1143322
Color comparator box	each	173200
Color disc, benzotriazole, 0–15 mg/L	each	9266900
Color disc, tolyltriazole, 0–15 mg/L	each	9264500
Plastic viewing tubes, 18 mm, with caps	4/pkg	4660004
Power supply for UV lamp, 115 V	each	2670700
Power supply for UV lamp, 220 V	each	2670702
UV lamp, shortwave, pencil type	each	2671000
UV lamp kit, 115 VAC, includes lamp, power supply, goggles	each	2082800
UV lamp kit, 220 VAC, includes lamp, power supply, goggles	each	2082802
UV safety goggles	each	2113400

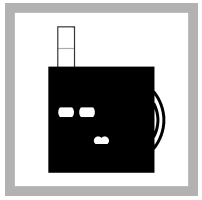
Optional items

Description	Unit	Item no.
Benzotriazole standard solution, 500 mg/L	100 mL	2141342
pH paper, 1.0–11.0 pH, 4.6-meter (15-foot) roll	5/pkg	39133
Rochelle salt solution	29 mL DB	172533
Sulfuric acid standard solution, 1.0 N	100 mL MDB	127032
Water, deionized	500 mL	27249

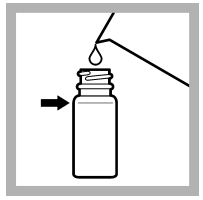
Test procedure—Benzotriazole/Tolyltriazole (0–15 mg/L)



1. Fill a tube to the first line (5 mL) with sample.

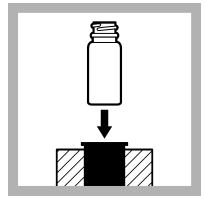


2. Put the tube into the left opening of the color comparator box.

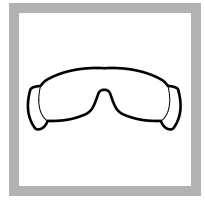


3. Fill the bottle to the 25-mL mark with sample.

4. Add one Triazole Reagent Powder Pillow. Swirl to mix.



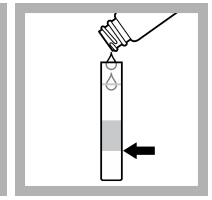
5. Put the bottle in the bottle holder. Keep the bottle holder in the storage case.



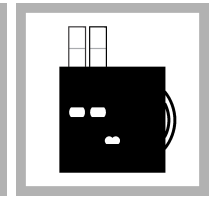
6. Put on UV safety goggles.

7. Put the UV lamp in the bottle. Set the UV lamp to ON.

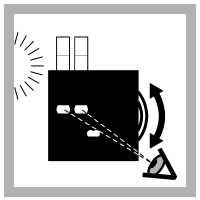
8. Wait 5 minutes for sample digestion. A yellow color develops. Set the UV lamp to OFF. The bottle gets warm.



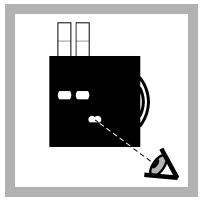
9. Fill a second tube to the first line (5 mL) with the digested sample.



10. Put the second tube into the color comparator box.



11. Hold the color comparator box in front of a light source. Turn the color disc to find the color match.



12. Read the result in mg/L in the scale window.

Interferences

Interfering substance	Interference level
Acrylates (as methyl acrylate)	More than 50 mg/L
Alum	More than 400 mg/L
Borate (as sodium tetraborate (borax))	Adjust the sample pH to 4–6 with 1 N sulfuric acid, then start the test procedure. If the sample contains more than 4000 mg/L, dilute the sample.
Chlorine (as Cl_2)	More than 20 mg/L
Chromium (as chromate)	More than 12 mg/L
Color	Causes a positive interference
Copper	More than 10 mg/L
Hardness	More than 500 mg/L as $CaCO_3$. Add 10 drops of Rochelle Salt Solution before the reagent is added.
Iron	More than 20 mg/L
Lignosulfonates	More than 40 mg/L
Magnesium	More than 300 mg/L as $CaCO_3$
Molybdenum (as molybdate)	More than 200 mg/L
Nitrite	Adjust the sample pH to 4–6 with 1 N sulfuric acid, then start the test procedure. If the sample contains more than 4000 mg/L, dilute the sample.
Phosphonates (AMP or HEDP)	More than 100 mg/L
Sulfate	More than 200 mg/L
Zinc	More than 80 mg/L
Strong oxidizing or reducing agents	Interfere at all levels