



Water in Oil Test Kit

WO-1 (2237300)

DOC326.97.00104

Safety information

WARNING: **Fire hazard. The contents of the reaction tubes are flammable. Keep the reaction tubes away from heat, sparks and open flame. Do not smoke near the reaction tubes.**

WARNING: **Fire hazard. During the test, water in the oil sample reacts with the calcium hydride in the reaction tube to form flammable hydrogen gas in the apparatus. Keep the apparatus away from heat, sparks and open flame during the test. Do not smoke near the apparatus during the test.**

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

Test preparation

- For oil samples more than 10% water, decrease the sample volume. For example, to increase the test range to 0 to 20%, divide the sample volume by 2 (0.4 mL). Multiply the result by 0.5.
- For oil samples less than 0.5% water, increase the sample volume. For example, multiply the sample volume by 2 (1.6 mL). Subtract 0.1% from the result, then multiply by 0.5.

Disposal

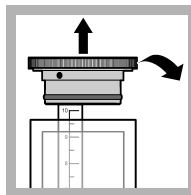
WARNING: **Dispose of reacted solutions according to local, state and federal regulations. Refer to the Safety Data Sheets for disposal information for unused reagents. Refer to the environmental, health and safety staff for your facility and/or local regulatory agencies for further disposal information.**

Correction factor

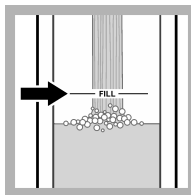
Multiply the test result by the applicable correction factor.

Altitude	Correction factor	Altitude	Correction factor
Sea level	1.00	3000 ft	0.90
1000 ft	0.97	4000 ft	0.86
2000 ft	0.94	5000 ft	0.82

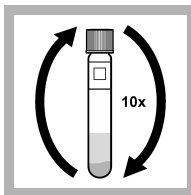
Test procedure—Water in Oil (0 to 10%)



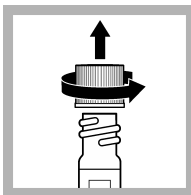
1. Remove the cap from the apparatus.



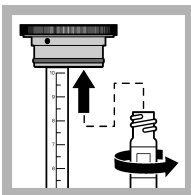
2. Add water to the center tube (1) to the "FILL" mark. Refer to [Figure 1](#) on page 1.



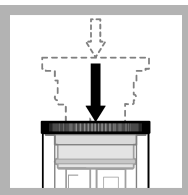
3. Invert a reaction tube 10 times.



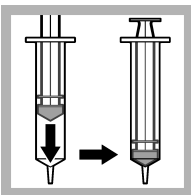
4. Remove the cap from the reaction tube.



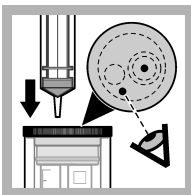
5. Attach the reaction tube to the threaded hole in the apparatus cap (3).



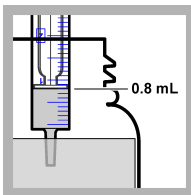
6. Put the cap on the apparatus. Push fully down.



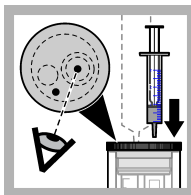
7. Push the plunger of the large syringe (2) fully in.



8. Put the tip of the large syringe in the hole in the apparatus cap (3) that is not above the reaction tube.



9. Add 0.8 mL of the oil sample to a small syringe (4).

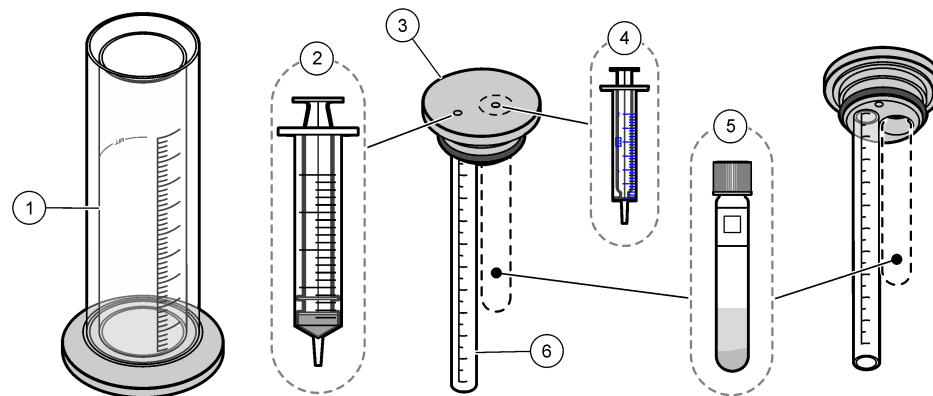


10. Put the tip of the small syringe in the hole in the apparatus cap (3) that is above the reaction tube.

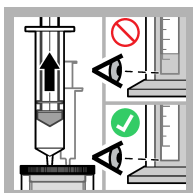
Replacement items

Description	Unit	Item no.
Water in Oil reagent, reaction tubes, TNT 4.5 mL	50/pkg	2236945
Bottle, square, polyethylene, 175 mL	12/pkg	2086874
Syringe, disposable, 2 mL	25/pkg	2228725
Apparatus, Water in Oil test	each	2237500
Syringe, Luer-Lok Tip, 20 mL	each	2237400

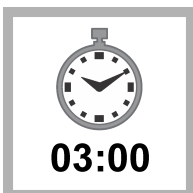
Figure 1 Test kit parts



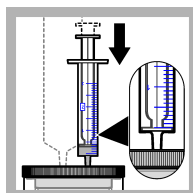
1 Center tube	3 Apparatus cap	5 Reaction tube
2 Large syringe	4 Small syringe	6 Lift tube



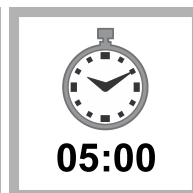
11. Slowly pull the plunger of the large syringe until there is no water in the lift tube (6).



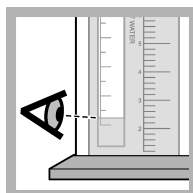
12. Wait 3 minutes to make sure that water does not go into the lift tube (no air leak).



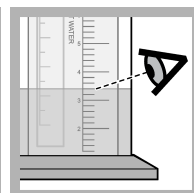
13. Slowly push the plunger of the small syringe fully in.
NOTE: If the sample is added too quickly, hydrogen gas pressure will remove the apparatus cap and/or foam will go out of the vial. If the apparatus cap is removed or foam goes out of the vial, do the test again with a new reaction tube and less sample.



14. Wait 5 minutes for the reaction to complete.
The reaction increases the pressure in the center tube. The pressure pushes water up the lift tube and into the outer cylinder.

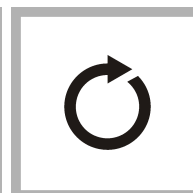


15. If there is no water between the outer cylinder and the center tube, read the percent water from the marks on the lift tube (0 to 1%).

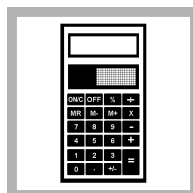


16. If there is water between the outer cylinder and the center tube, read the percent water from the marks on the center tube (1.2 to 10%).

NOTE: Read the water level between the outer cylinder and the center tube, not the water level in the center tube.



17. If the result is less than 0.5% or more than 10%, do the test again with a new reaction tube. Refer to [Test preparation](#) on page 1 to adjust the sample volume.



18. Multiply the result by the correction factor. Refer to [Correction factor](#) on page 1.

