

WATER IN OIL TEST KIT

Model WO-1

Cat. No. 22373-00

The HACH logo is centered within a thick black horizontal band. It consists of the word "HACH" in a bold, sans-serif font, enclosed within a white oval that has a black border.

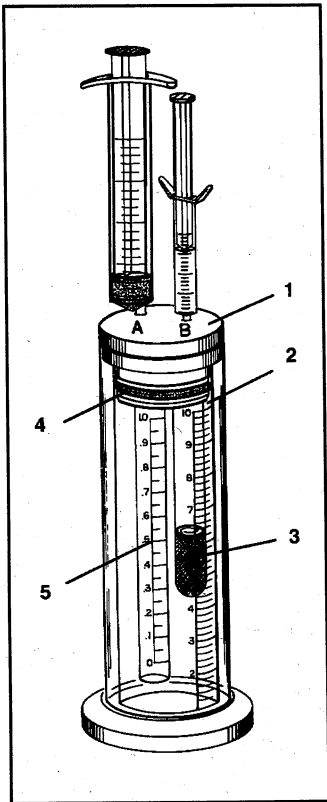
Procedure

1. Remove the cap assembly (1) with a slight twisting motion.
2. Fill the center tube (2) to the FILL mark with water and place the unit on a level surface.

WARNING: Contents of the reaction tubes are flammable and react with water to produce flammable hydrogen gas. Wear safety glasses or goggles to protect your eyes. Keep tubes away from heat, sparks and open flame. DO NOT SMOKE WHILE HANDLING THE TUBES OR RUNNING THE TEST.

WARNING: The chemical in this kit may be hazardous to the health and safety of the user if inappropriately handled. Please read all warnings before performing the tests and use appropriate safety equipment.

**HACH COMPANY, P.O. BOX 389, LOVELAND, COLORADO 80359
TELEPHONE: WITHIN U.S. 800-227-4224, OUTSIDE U.S. 970-669-3050, TELEX: 160840**



3. Invert a reaction vial (3) several times, leaving some solid material on the walls above the liquid. Remove the vial cap and screw the vial into the threaded hole in the under side of the cap assembly.
4. Replace the cap assembly. Use a slight twisting motion to be sure the cap is seated firmly and the o-ring (4) provides a good seal.
5. Insert the large syringe (with the plunger inserted) into hole A in the cap assembly. Be sure the syringe seats tightly in the hole.
6. Draw 0.8 mL of the oil sample into a small disposable syringe and insert the syringe into hole B in the cap assembly. Be sure the syringe seals properly. Do not inject the sample at this time.

7. Slowly withdraw the plunger of the large syringe until the water level is even with the bottom of the lift tube (5). Do **not** start the test at the 0 mark. Wait a few minutes to be sure the water level remains stable. If so, then the large syringe and cap assembly are sealed. Reseat them if necessary.
8. Inject the sample into the reaction vial slowly enough so that the reaction does not cause an overflow of foam from the reaction vial yet fast enough to establish a fast reaction. CAUTION: If the sample is added too quickly there will be a rapid generation of hydrogen gas which may cause the cap assembly to be blown off the Water in Oil apparatus. If the vial does foam over or the cap comes off, begin the test again with a new vial and a smaller test sample. *See Note B and Note C.*
9. After five minutes, or when the reaction is complete (*see Note E*), read the % water from either the scale on the lift tube (0-1%) or the scale on the center tube (1.2 - 10%). When reading from the center tube scale, use the water level between the outer cylinder and center tube, not the water level inside the center tube. *See Note D* for disposal instructions.

NOTES

- A. If the test is performed at high altitude, select the appropriate correction factor and multiply it by the reading to determine the actual percent of water in the sample.

Altitude (ft)	Sea Level	1000	2000	3000	4000	5000
Correction Factor	1.00	0.97	0.94	0.90	0.86	0.82

- B. For oil samples containing more than 10% water, the range can be extended by reducing the volume of the test sample. For example, to double the range (0 - 20%), use half the sample volume (0.4 mL) and multiply the reading by 2.
- C. For oil samples containing less than 0.5% water, increase the sample volume. For example use 1.6 mL of sample and subtract 0.1% from the reading before multiplying by 0.5.

- D. **DISPOSAL INSTRUCTIONS:** On completion of the test, return the water to the water bottle for reuse. The small syringes are disposable and should be discarded. **USED REACTION VIALS ARE HAZARDOUS. WEAR SAFETY GLASSES. DO NOT SMOKE.** These reaction vials will still contain some unreacted materials and should be stabilized before being discarded. Drop the used open vials, one at a time, into a one-gallon plastic jug containing about one inch of water. The jug should be rocked gently until the reaction is complete. The vials may then be disposed of as ordinary refuse.
- E. After a few minutes the reaction will be very slow. For most samples the reaction with water will be complete after five minutes. After this time, a very slow drift to higher readings may be observed. This drift may be due to continued reaction with oil additives or drifting of water vapor from the reservoir into the reaction tube.

Replacements

Cat. No.	Description	Unit
22369-45	Water in Oil Reagent Vials.....	pk/50
20868-88	Bottle, square, polyethylene, 170mL	pk/6
22287-25	Syringe, disposable, 2 mL	pk/25
22375-00	Water in Oil apparatus	each
22374-00	Syringe, 20 mL.....	each

©Hach Company, 1985. All rights are reserved.

10/98

Made in. U.S.A.