

INSTRUCTIONS FOR
CLOD-D-TECT[®] Q

Used Oil Titration Kit

Quantitative test kit for chlorine contamination in used oil.

EACH KIT CONTAINS:

1. A plastic test tube with white dispensing cap containing a colorless ampule (bottom) and a yellow-dotted gray ampule (top) - Tube #1.
2. A plastic test tube with a clear cap each containing 7 ml of a buffer solution and a red-green ampule - Tube #2.
3. A polypropylene sampling syringe and a tissue wipe.
4. A plastic filtration funnel.
5. A plastic titration burette attached to a plastic screw cap.
6. A white, plastic syringe plunger rod.
7. A glass ampule contained in a cardboard sleeve and plastic tube designated as "Disposal Ampule".

READ CAUTION AND INFORMATION SECTIONS ON BACK BEFORE PERFORMING TEST. WEAR RUBBER GLOVES AND SAFETY GLASSES.

DIRECTIONS

1. PREPARATION Remove contents from box. Place the 2 plastic tubes into the holder at the front of the box.

2. SAMPLE INTRODUCTION Unscrew the white dispensing cap from Tube #1. Work the plunger on the empty sampling syringe a few times to ensure that it slides easily. Place the tip of the syringe into the oil sample to be tested and slowly pull back on the plunger until it reaches the stop and cannot be pulled further. Remove the syringe from the oil sample and wipe any excess sample from the outside of the syringe with enclosed tissue. Check the contents of the sampling syringe to ensure that the test sample is free of air bubbles (If not, discharge the oil sample and obtain a new sample). Place the tip of the syringe in Tube #1 and dispense the oil sample by depressing the plunger. Replace the white cap on the tube tightly.

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3. REACTION Break the bottom (colorless) ampule in the tube by compressing the sides of the tube. Mix thoroughly by shaking the tube vigorously for about 30 seconds. Break the top (gray) ampule in the tube and shake thoroughly for about 20 seconds. Allow the reaction to proceed for an additional 40 seconds (total of one minute), while shaking intermittently several times.

4. EXTRACTION Remove the caps from both tubes and pour the clear buffer solution from Tube #2 (clear cap) into Tube #1. Replace the white cap tightly on Tube #1 and shake vigorously for about 10 seconds. Vent the tube carefully by partially unscrewing the dispensing cap. Close securely and shake well for an additional 10 seconds. Vent again, tighten cap and stand tube upside down on its cap. Allow the phases to separate for a full two minutes.

5. ANALYSIS Place the plastic filtration funnel into Tube #2. Position Tube #1 over the funnel and open nozzle on the dispensing cap. Be sure to point the nozzle away from the operator while opening it, and check that the nozzle is open completely before dispensing the clear solution. Dispense 5 mls of the clear solution through the filter into Tube #2 (up to the line) by squeezing the sides of Tube #1. Do not allow any oil to pass through the filter into Tube #2. Close the nozzle on the dispensing cap on Tube #1 and remove the filter funnel from Tube #2.

6. Place the white plunger rod into the titration burette and press until it snaps into place. Tap the titrating burette gently while holding upright to ensure all air bubbles are on top next to the plunger. Break off (do not pull off) the tip on the titration burette. Place the burette into Tube #2 and tighten the cap. Break the colored ampule by squeezing the sides of the test tube and shake gently for 10 seconds. **Do NOT zero the plunger prior to analyzing the sample.**

7. Dispense titrant slowly by pushing down on the white plunger rod. Shake the tube continuously while adding titrant to mix the titrant with the solution. Continue adding titrant until the solution turns from yellow to light purple. An intermediate pink color may develop in the solution but should be disregarded. Continue titrating until a true light purple color is obtained. A dark purple color means the titration has been carried too far (see photo).

8. RESULTS Read the total chlorine concentration of the original oil sample directly on the titration burette at the black tip of the plunger rod. Record the total chlorine concentration immediately as the purple color will fade with time.

9. DISPOSAL Empty the titration burette into Tube #2 by completely depressing the plunger. Open the "Disposal Ampule" container and drop the ampule into Tube #2. Replace the cap on the test tube. Crush the ampule by squeezing the sides of the tube. Shake for 5 seconds. This reagent immobilizes the mercury so that the kit passes the EPA's TCLP test. See caution section below for additional information on disposal.

SUGGESTIONS FOR USING THE CLOR-D-TECT[®] Q TEST KIT

- ! The kit is designed for testing used oils and is not intended for use on water/oil mixtures that contain more than 20% water. For samples that contain more than 20% water, contact Dexsil about Hydroclor-Q[®] kit designed for testing samples for chlorinated organic compounds in water.
- ! The kit works well on all types of waste and used oils including crankcase, hydraulic, diesel, lubricating, fuel oils and kerosene. It is designed for use only on oils which are hydrocarbon-based. Some oils, such as cutting fluids which contain more than 3 or 4% sulfur may give false positive results. False negatives will not occur. For any questions regarding the applicability of the kit for your sample, contact Dexsil's technical service department.
- ! The kit should be examined upon opening to see that all of the components are present and that all the ampules (4) are in place and not leaking. The liquid in Tube #2 (clear cap) should be approximately 1/2 inch above the 5 ml line and the tube should not be leaking. The ampules are not intended to be completely full.
- ! Perform the test in a warm, dry area with adequate light. In cold weather, a truck cab is sufficient. If a warm area is not available, Step 3 should be performed while warming Tube #1 in palm of hand.
- ! Always crush the clear ampule in Tube #1 first. If this sequence has not been followed, stop the test immediately and start over using another complete kit. When an incorrect testing sequence is followed, a false negative may result which may allow a contaminated sample to pass without detection.
- ! In Step 4, when transferring the buffer solution from Tube #2 into Tube #1, tip Tube #2 to an angle of only 45° to prevent the ampule holder from sliding out.

CAUTION

- ! When crushing the glass ampules, press firmly in the center of the glass ampule **ONCE**. Never attempt to re-crush broken glass as it may come through the plastic and cut fingers.

- ! In case of accidental breakage or spillage onto skin or clothing, wash with large amounts of water. All the ampules are poisonous and should not be taken internally.
- ! Do not ship kits on passenger aircraft.
- ! The gray ampule in the white-capped test tube contains metallic sodium. Metallic sodium is a flammable solid and is water reactive.
- ! Wear rubber gloves and safety glasses while performing test.
- ! Dispose of used kits properly. The mercury in Tube #2 is made insoluble by the disposal ampule and used kits will pass the USEPA TCLP test for land disposal. More stringent state and local regulations may apply. Contact Dexsil if you have any specific questions concerning disposal procedure.
- ! Read the Material Safety Data Sheet before performing the test.
- ! Keep Out of Reach of Children.

MANUFACTURER'S WARRANTY

This kit is warranted to be free of defects in material and workmanship until the expiration date stamped on the box. Manufacturer's sole and exclusive liability under this warranty shall be limited to replacement of any kit that is proven to be defective. Manufacturer shall not be liable for any incidental or consequential damages.

Reliable test results are highly dependent upon the care with which the directions are followed and, consequently, cannot be guaranteed.

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