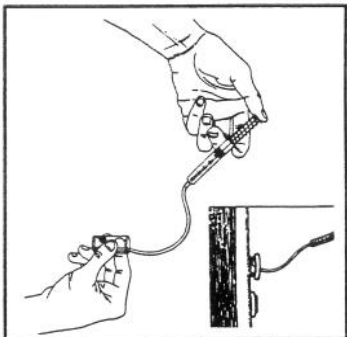


Test Procedure

1.



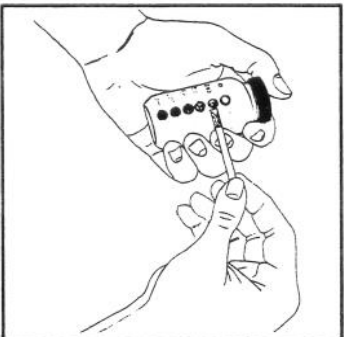
Using the syringe, draw coolant sample and dispense into the vial. (Sample should be below 110° F.)

2.



Dip one nitrite strip into sample for 2 or 3 seconds, remove, and place face up on paper towel.

3.



After one minute, match strip color on bottle. Determine intersecting block on chart, and follow recommendation.

CATERPILLAR®

NEHS0559-01
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ORIGINAL

TOOL OPERATING MANUAL

4C9301 Coolant Conditioner Test Kit

Test determines conditioner level and gives maintenance recommendations for cooling systems. Kit is specifically for use with Caterpillar liquid cooling system conditioners and coolant conditioner "precharge" and "maintenance" element filters. Testing is recommended on a regular basis because conditioners are constantly depleted at a rate that cannot always be predicted. Different antifreeze formulas, maintenance errors, blowby gases, topping off radiator with water, engine usage and other atypical conditions found with the use of heavy duty diesel and gasoline engines, affect depletion rate.

Read instructions completely before using kit.

Information and Instructions

This test kit measures concentrations of cooling system corrosion inhibitor additives in engines. The kit gives fast and accurate results of nitrite levels and gives cooling system maintenance recommendations.

Materials provided in kit:

Nitrite strips
Color chart on label
Pipette
Sample bottle
Instruction sheet

For best results with test:

- Start with clean hands and utensils.
- Run test in well lighted area.
- Coolant sample should be between 40° and 110° F in temperature.
- Replace cap on test strip bottle immediately to protect remaining test strips.
- Carefully follow procedure outlined on the strip bottle.
 1. Dip test strip into coolant sample for 2 or 3 seconds and remove from sample. Do **NOT** shake excess liquid off or blot pad!
 2. Wait one minute for color to develop.
 3. Match color of test strip with best color on label and read maintenance recommendation.
- Dip the reactive end (coated end) of test strip.
- Follow recommendations according to the test results.
- Retest nitrite if "drain half" procedure was performed.
- Read color of test strip after one minute has elapsed, but not later than 2 minutes. (Color may change as reaction pad dries.)
- If coolant sample is below 40° F or the testing is being done below 50° F, read color of strip after 2 or 3 minutes, but before 5 minutes.

- Use "test by" date stamped on label. Test strips are light yellow in color, very similar in color to the 0 ppm nitrite level on the color chart. If test strips have a light brown or brown color when removed from the bottle, do **NOT** use them! This discoloration of strips can be caused by exposure to storage temperatures above 100° F or carelessly leaving the bottle cap open, which allows exposure to humidity or moisture.

Recommendations

Precharge:

Additive levels are dangerously low! To bring corrosion inhibitor concentration up to recommended levels, add one pint additive per 4 gallons coolant OR use the appropriate precharge filter.

Add Make-Up:

Additive levels are low. Add one pint liquid additive per 20 gallons of coolant or use the appropriate maintenance filter.

Ideal:

Do **NOT** add conditioner at this time!

Drain half:

Additive levels are high. Drain 50% of coolant and replace with water/antifreeze mixture. Circulate and retest. Do **NOT** add additives.

Test Kit Limitations

For best results, sample should contain 20 to 60 percent ethylene or propylene glycol. No interferences are found with phosphate, nitrate, borate, calcium, silicate, molybdate, tolyltriazole and mercaptobenzothiazole (MBT). Magnesium and calcium above 200 ppm (hard water) will cause color reaction to be elevated by one color block.

For best results, use strips by date stamped on bottle.