Ford Motor Company

FORD LABORATORY TEST METHOD BJ 020-02

TEST FOR THERMAL OXIDATION OF OIL

Application

This procedure describes the method used to determine thermal oxidation properties of hydraulic petroleum.

Apparatus Required

Beaker

Two 600 mL beakers
Catalog Number 13912-240 or equivalent

Source: V.W.R. Scientific
P.O. Box 187
Allen Park, Michigan 48101

Oven

Convection type - must be able to maintain a temperature of 250 +/- 5 °F.

Graduated Cylinder

500 mL
Catalog number 24710-180 or equivalent

Source: V.W.R. Scientific
P.O. Box 187
Allen Park, Michigan 48101

Steel Wire

SAE 1020
Diameter - approximately 0.100 inches

Sand Paper

Number 00 grade or equivalent

Camera

Polaroid type of equivalent

Date	Action	Revisions
2001 07 24	Revised	Editorial – no technical change A. Cockman
1992 05 14		

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Conditioning and Test Conditions

All test values indicated herein are based on material conditioned in a controlled atmosphere of 23 +/- 2 °C and 50 +/- 5 % relative humidity for not less than 24 h prior to testing and tested under the same conditions unless otherwise specified.

Procedure

1. Place 300 mL of the oil to be tested into a 600 mL beaker.
2. Clean a 45 inch length of SAE 1020 steel wire with Number 00 grade sand paper, remove particulate by flushing with benzene and allow to dry.
3. Coil the wire and completely submerge in the 300 mL of oil in the beaker.
4. Place the beaker into the oven for 168 h at 250 +/- 5 °F. Move the beaker to a new position each day to compensate for any temperature differential that may exist in the oven. This differential must not exceed 5 °F.
5. After the 168 h test period, remove the beaker from the oven and remove the coil of wire from the oil with care.
6. Transfer the oil into a clean beaker.
7. Photograph the coil of wire and the interior area of the beaker used in the test. Color photographs are preferable. Photographs are for record keeping only.
8. Return the coil of wire and the oil to the original beaker used in the test.
9. Agitate the oil thoroughly and assure that the sludge is completely dispersed in the oil.
10. With the sludge completely dispersed, obtain samples for Neutralization Number and Precipitation Number Tests after complete dispersion is attained.
11. Perform Neutralization Number Test per ASTM D 974.
12. Perform Precipitation Number Test per ASTM D 91.

Chemicals, materials, parts, and equipment referenced in this document must be used and handled properly. Each party is responsible for determining proper use and handling in its facilities.

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