Ford Motor Company

FORD LABORATORY TEST METHOD EU-AT 050-01

OIL CONTENT OF SOLUBLE OIL EMULSIONS

Application

This method is used to determine the oil content of soluble cutting oil emulsions.

Apparatus and Chemicals Required

Separating Funnel
250 mL capacity.

Flat Bottom Flask
150 mL capacity with a 10 mL graduated neck, conforming to BS 676 or 130 mL capacity to DIN 51368E.

pH Meter
Or equivalent pH indicator papers.

Laboratory Oven or Water Bath
Capable of maintaining a temperature of 90 +/- 5 °C.

Sulphuric Acid - cp 50 %

or

Hydrochloric Acid - Concentrated

Water
Distilled or demineralised.

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.

Date	Action	Revisions	
2001 01 31	Revised	Editorial – no technical change	A. Cockman
2000 04 25		Editorial – no technical change	A. Cockman
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Preparation of Sample

Note: Before transferring the sample to the separating funnel, check the pH value and record.

1. Gently shake the sample until it is consistent, then pour 200 mL into the separating funnel and allow to stand for 16 +/- 2 h. Examine for evidence of a creamy layer, separation, flocculation and discolouration.

2. After standing, run off the first 10 mL and discard. Run off slowly (approximately 150 mL per minute) into a suitable beaker a further approximate 150 mL of dispersion. The remainder, which is mainly tramp oils can be discarded. Stir the dispersion to obtain consistency and test immediately.

Procedure A

1. Measure 100 mL of the uniform dispersion into the graduated flask and add acid to the top graduation.

2. Shake the contents of the stoppered flask thoroughly, remove stopper slowly. Caution: Slight pressure from gassing.*

3. Place flask in a laboratory oven at 90 +/- 5 °C and heat for a minimum of 3 hours or on a boiling water bath for 1 hour minimum to obtain complete separation.

4. Remove the flask and allow to stand for 1 hour, swirling it from time to time to detach any oil adhering to the sides.

5. Determine the difference in scale readings corresponding with the top edge of the meniscus at the upper and lower levels of the separated oil, and record the volume to the nearest 0.1 mL.

Evaluation

Calculate the oil content as a percentage by volume and report it to the nearest 0.1 %.

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