

MISCIBILITY OF AUTOMATIC TRANSMISSION FLUIDS APPLICATION

Application

This test method determines the miscibility, or ability of automatic transmission fluids to mix. It also determines the cloud and pour points of transmission fluids.

Materials and Apparatus Required

3 Sample Jars - 500 cc, 1000 mm length, max

Cloud and Pour Point Thermometers - per ASTM E 1

Refrigeration System - capable of - 70 °C

Hot Oil Bath System - capable of 250 °C

Reference Fluids - ESP-M2C166-H

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. Shake test fluid well. Fill two sample jars, A & B, to a height of 400 mm with test fluid and one jar to a height of 800 mm.
2. Continue filling jars A & B to a height of 800 mm with specified reference fluids. Mark all sample jars.
3. Mix thoroughly. Observe and record color and any visible separation.
4. Insert low temperature ASTM cloud and pour point thermometers into each sample jar.

Date	Action	Revisions
2001 07 25	Revised	Editorial – no technical change A. Cockman
1995 05 16		

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5. Place samples in metal holders in refrigerator at - 55 +/- 2 °C.
6. When temperature of samples indicate - 20 °C, remove and tilt to horizontal position. If movement is observed in first 5 s, replace in refrigerator.
7. Lower temperature of samples 5 °C and repeat Step 6 until no motion of fluid is observed in 5 s. Record temperature 5 °C higher as point.
8. Remove sample and allow to thaw. Observe and record for separation when cloudiness has disappeared.
9. Allow samples to reach 23 +/- 2 °C, then remove thermometers and place samples in hot oil bath at 230 +/- 2 °C until the samples warm to 230 +/- 2 °C.
10. Remove samples from hot oil bath and place in refrigerator at pour point established in Step 7 for 24 h.
11. Remove from refrigerator and allow to thaw. Observe and record separation and color change when cloudiness has barely disappeared.
12. Allow samples to reach 23 +/- 2 °C. Observe and record separation and color changes.

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.