



FLUID, TORQUE - AUTOMATIC TRANSMISSION

ESW-M2C2-B

1. SCOPE

The material defined by this specification is a mineral oil automatic transmission torque fluid.

2. APPLICATION

This specification was released originally for fluids used to test the performance of various automatic transmission components.

3. REQUIREMENTS

3.0 STANDARD REQUIREMENTS FOR PRODUCTION MATERIALS

Material suppliers and part producers must conform to the Company's Standard Requirements For Production Materials (WSS-M99P1111-A).

3.1 COMPATIBILITY

This fluid shall be compatible with other commercial automatic transmission fluids when equal volumes of each are heated together to 149 +/- 2 °C for one hour and then cooled to -29 +/- 1 °C.

3.2 VISCOSITY (ASTM D 445)

At 37.8 °C	10.4 - 12.2 mm ² /s
At 98.9 °C	2.4 - 2.9 mm ² /s

3.3 FLASH POINT, min (ASTM D 92)

149 °C

3.4 FIRE POINT, min (ASTM D 92)

158 °C

3.5 POUR POINT, max (ASTM D 97)

-30 °C

3.6 COPPER STRIP TEST, max (FLTM BJ 021-01)

1b

3.7 ANTI-FOAMING PROPERTIES (ASTM D 892)

Foaming Tendency
at end of 5 min.
blowing period

Foam Stability
at end of 3 min.
settling period

Sequence 1, max
Sequence 2, max
Sequence 3, max

100 ml
500 ml
100 ml

0 ml
0 ml
0 ml

Date	Action	Revisions
2004 05 13	Revised	Para 3.0 inserted; para 3.13 & 4 deleted
1978 06 12	PCR RD – 782440-1	Metricated & Retyped
1965 04 19	CPS - 457157	Released





3.8 FOUR-BALL WEAR TEST, max diameter of scar 0.400 mm
(FLTM BJ 016-01)

40 kg load, 600 rpm, 2 h at 93 +/- 2 °C

3.9 ANTI-CORROSION PROPERTY No visible rust
(ASTM D 665, 200 h, distilled water)

3.10 EFFECT ON FORD MOTOR COMPANY REFERENCE SEAL COMPOUND NO. RDR-008*

3.10.1 Aged 70 h at 52 +/- 1 °C in Each Approved Torque Fluid
ESW-M2C2-B
(ASTM D 471, Method A, Aluminum Block)

Tensile Strength, kPa, max change from original	-10%
Elongation, max change from original	-10%
Volume, change from original	+2 to +10%
Hardness, Durometer A, points change from original	0 to -10

Bend Test: Slab shall not crack when bent completely flat against itself after aging.

*Reference seal compound may be obtained as ASTM D 15 Tensile Slabs from the Automatic Transmission Components Engineering Department, Transmission Division, P. O. Box 2097, Livonia, Michigan 48151.

3.11 ODOR

Shall offer no objectionable odor under operating temperature of 93 +/- 2 °C.

3.12 TOXICITY

The fluid shall be non-toxic and shall not cause skin rash or irritation (dermatitis) to exposed handlers in normal production operations.