



FLUID, MANUAL TRANSMISSION

WSS-M2C200-E1

1. SCOPE

The material defined by this specification is a transmission lubricant using Hydrocrack (HC) base fluids compounded with viscosity index improvers and extreme pressure additives.

2. APPLICATION

This specification was released originally for material used to provide general lubrication for manual transaxles and transmissions over a wide temperature range. The material has a fuel economy effect and is for lifetime fill.

3. REQUIREMENTS

3.1 APPROVED SOURCES

This specification requires the use of approved sources. Only the sources identified on the Ford Approved Source List (ASL) can be used when this specification is listed on the drawing, CAD file, or other documents. The list of approved sources is located within Ford at www.mats.ford.com or available externally through a Ford Materials Engineer.

3.2 COLOR (Visual)

Clear

Subsequent batches must be visually consistent with the original sample color.

3.3 MISCIBILITY TEST

Material approved to this specification must be miscible with all other approved materials in all proportions. These blends must also meet all requirements of this specification

3.4 VISCOSITY

3.4.1	At 100 °C (ASTM D445, ISO 3104)	4.3 mm ² /s min
3.4.2	At -26 °C (ASTM D2983, DIN 51398)	1200 mPa.s max
3.4.3	At -40 °C (ASTM D2983, DIN 51398)	5000 mPa.s max
3.4.4	Shear Stability (CEC L-45-A-99)	
	Viscosity loss after 20 h at 100 °C,	5% max
3.4.5	Viscosity index	180 min

Date	Action	Revisions	Rev. 01
2017 06 27	Editorial	Corrected footer	
2016 02 22	Released		



3.5 POUR POINT -45 °C max
(ISO 3016)

3.6 FLASH POINT 180 °C min
(ISO 2592)

3.7 COPPER CORROSION
(ISO 2160, ASTM D130)

3.7.1 3 hours at room temperature 1 max
3.7.2 3 hours at 150 +/- 2 °C 1 max

3.8 ANTI-FOAMING PROPERTIES
(ASTM D892/6082)

	Foam Tendency at end of 5 min blowing period	Foam Stability at end of 1 min settling period
Sequence 1, max	20 mL	0 mL
Sequence 2, max	40 mL	0 mL
Sequence 3, max	20 mL	0 mL
Sequence 4, max	200 mL	0 mL

(For Sequence 4 use ASTM D6082, static foam)

3.9 MOISTURE (bulk / 208L drum) 500 ppm max
(ISO 10337 / ASTM D6304)

3.10 ODOR

Material manufactured to this specification shall produce no objectionable odor under any test performed herein, particularly the tests described in paragraph 3.7 (30 minute and 60 minute intervals during the 3-hour test).

3.11 DENSITY Report
(Any agreed method)

3.12 ELASTOMER COMPATIBILITY
(ASTM D471, paragraph 6.1, using aluminum block or all approved equivalents.
168 hours at 150 +/- 3 °C)

75 ACM 121433 (Acrylic Rubber)
Volume change +3.6 +/- 3%
Durometer hardness +1 +/- 4

75 FKM 595 (Fluorinated Rubber)
Volume change +0.1 +/- 3%
Durometer hardness +1 +/- 6

HNBR 78178 (Hydrogenated Acrylonitrile-Butadiene Rubber)
Volume change Report
Durometer hardness Report