



GREASE, SILICONE, PTFE THICKENED

ESA-M1C200-A

1. SCOPE

The material defined by this specification is a NLGI Grade 2 synthetic lubricating grease consisting of dimethyl polysiloxane fluid thickened with PTFE.

2. APPLICATION

This specification was released originally for grease used on parking brake cables. It can also be used on microcellular urethane (MCU) jounce bumpers and brake calipers. Service temperature range is -40 to 200 °C.

3. REQUIREMENTS

3.1 STANDARD REQUIREMENTS FOR PRODUCTION MATERIALS

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

3.2 COLOR
(Visual)

White

3.3 UNWORKED PENETRATION, tenths of a millimeter
(ASTM D217, DIN ISO 2137, 0 strokes)

265 – 300

3.4 DROPPING POINT
(ASTM D2265, DIN ISO 2176)

204 °C min

3.5 OIL SEPARATION FROM GREASE
(ASTM D1742, DIN 51817 or FTMS 791 C 321.3, 24 h at 121°C)

0.5% max

3.6 EVAPORATION
(ASTM D972, 24h at 121 °C)

1% max

4. GENERAL INFORMATION

This information given below is provided for clarification and assistance in meeting the requirements of this specification. Contact gmfs@ford.com for questions concerning Engineering Material Specifications. Grease approved to this specification should have the following typical properties.

4.1 PTFE CONTENT
(according to formulation)

34 - 44% by weight

4.2 BASE OIL VISCOSITY
(ASTM D445, DIN 51562, ISO 3104)

4.2.1 Kinematic Viscosity at 40 °C

17,600- 21,500 mm²/s

4.2.2 Kinematic Viscosity at 25 °C

22,500 - 27,500 mm²/s

Date	Action	Revisions	Rev. 3
2012 02 15	Revised	See Summary of Revisions	A. Wedepohl, FNA
2008 10 13	A2- N-STATUS	A2 – Replaced by WSS-M13P13-A	L. Schmalz, FNA
1982 08 06	Released	CAM2IR000200C3	

**4.3 PENETRATION**

(ASTM D217, DIN ISO 2137)

4.3.1 Unworked Penetration 265 – 300

4.3.2 Worked Penetration, 60 strokes 265 - 300

4.3.3 Prolonged Worked Penetration, 100,000 strokes 310 - 340

4.4 OXIDATION STABILITY

(ASTM D942 or DIN 51808, 100 hr at 100°C)

3.4 kPa

4.5 WATER WASHOUT

(ASTM D1264, DIN 51807 T02, 1 hr at 80 °C)

0.25 %

4.6 OIL SEPARATION DURING STORAGE

(ASTM D1742, DIN 51817 or FTMS 791 C 321.3, 100 °C)

0%

4.7 EVAPORATION

(ASTM D972, 24h at 121 °C)

0.05%

4.8 INTERFACE COMPATIBILITY4.8.1 Chemical Attack to Painted Surfaces
(FLTM BJ 126-01).

Note: Not tested for initial application of this grease. Grease must be tested for chemical attack to painted surfaces for applications that come in contact with paint surfaces, ex. E-coat and powder coat.

4.8.2 Resistance to Stress Cracking
(FLTM BO 127-03)

Note: Not tested for initial application of this grease. Grease must be tested for resistance to stress cracking when used for additional applications that come in contact with polymers such as PC, ABS, PC+ABS, ASA or acrylic

4.8.3 Elastomer Compatibility
(ASTM D4289, 70 h, 100 °C, DIN 53505, DIN 53504)

Note: Not tested for initial application of this grease. Successfully used on microcellular polyurethane jounce bumpers on several vehicle lines. Grease must be tested for elastomer compatibility when used for additional applications that come in contact with elastomers. Application specific elastomer should be used for testing instead of a reference elastomer.

Determine change in volume, hardness change tensile strength and elongation.

5. SUMMARY OF REVISIONS

2012 02 15 Lot certification tests moved to requirements, all other requirements moved to general information.

Added guidance on interface compatibility.