



GREASE, PAO - BARIUM COMPLEX SOAP

WSS-M1C273-A

1. SCOPE

The material defined by this specification is a NLGI 2 grease consisting of polyalphaolefin base fluid, barium complex soap thickener, extreme pressure additives and oxidation and corrosion inhibitors to give the desired characteristics.

2. APPLICATION

This specification was released originally for materials used for lubrication of MMT6 and IB5 transmission input shaft splines. The validated material is exclusive to GETRAG Ford Transmissions GMBH and should not be considered for use in other applications without validation.

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 Light Grey
(Visual)

3.3 WORKED PENETRATION, tenths of a millimeter 265 - 295
(ASTM D 217, DIN 2137, 60 strokes)

3.4 DROPPING POINT 230 °C min
(ASTM D 556, ASTM D 2265, DIN ISO 2176)

3.5 EMCOR CORROSION Rating 0 max
(ASTM D 6138, DIN 51802) (No corrosion)

3.6 4 BALL WELD LOAD 4000N min
(ASTM D 6138, DIN 51350 T4)

3.7 FUNCTIONAL APPROVAL

GETRAG Ford Transmissions GMBH reserve the right to subject materials submitted against this specification, to any additional investigation they consider necessary and use the data derived for their approval qualification.

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.

Date	Action	Revisions	Rev. 1
2011 09 02	Revised	See summary of revisions paragraph 5.	K. Cosgrave, FOF
2008 02 21	Activated		K. Cosgrave, FOF

**4.1 COMPOSITION**

4.1.1	Barium Complex Soap (According to formulation)	40-50 %
4.1.2	Base Oil Content PAO (According to formulation)	40-50 %

4.2 BASE OIL PROPERTIES

4.2.1	Kinematic Viscosity at 40°C (DIN 51562 T01)	50 mm ² /s
4.2.2	Kinematic Viscosity at 100°C (DIN 51562 T01)	8 mm ² /s
4.2.3	Pour Point (DIN ISO 3016)	-65 °C
4.2.4	Flashpoint (DIN ISO 2592)	268 °C

4.3 PENETRATION

(ASTM D 217, DIN 2137)

4.3.1	Worked Penetration, 60 strokes	274
4.3.2	Prolonged Worked Penetration, 100,000 strokes	-2 % change from 60 stroke

4.4 WATER RESISTANCE, STATIC TEST

(DIN 51807 T1, 90°C)

Rating 0
(No change)**4.5 FLOW PRESURE**

(DIN 51805, -35°C)

550 mbar

4.6 OIL SEPERATION

(DIN 51817, 18h, 40°C)

0.7 %

4.7 OXIDATION STABILITY

(DIN 51808, t=100hr, T=99°C)

0.05 kPa

4.8 INTERFACE COMPATIBILITY

4.8.1	Chemical Attack to Painted Surfaces (FLTM BJ 126-01)
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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.