



GREASE, LITHIUM, NLGI 1

WSD-M1C234-A

1. SCOPE

The material defined by this specification is a grease consisting of mineral oil, Lithium (Li) or Lithium-Calcium (Li/Ca) thickener, oxidation and corrosion inhibitors and other additives to give the desired characteristics.

2. APPLICATION

This specification was released originally for grease used as a general purpose, body hardware lubricant and where good low temperature properties are required.

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)

Amber or Beige

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

310 – 340

3.4 DROPPING POINT
(ASTM D556, ASTM D 2265, DIN ISO 2176)

165 °C min

3.5 CORROSION PROTECTION

3.5.1 Copper Corrosion (Copper Strip)
(ASTM D 4048 or DIN 51811, 24h, 50 °C)

1b max

3.5.2 Emcor Corrosion
(DIN 51802 or IP220, 168h)

0 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 COMPOSITION

4.1.1 Thickener Type
(According to formulation)

Li	Li/Ca
<5%	10-20%

4.1.2 Base Oil – Mineral
(According to formulation)

93%	80-90%
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Date	Action	Revisions	Rev. 2
2011 08 01	Revised	See Summary of Revisions	S. Kornlyo, NA
2004 04 29	Revised	Para 3.0 inserted; para 3.1, 3.2, 3.3, 3.6 & 4 deleted	
1992 10 26	C10246427	Released	

**4.2 BASE OIL VISCOSITY**

(DIN 51562 T01, ASTM D 7042, ASTM D 445)

4.2.1 Kinematic Viscosity at 100 °C	18	3 mm ² /s
4.2.2 Kinematic Viscosity at 40 °C	201	14 mm ² /s

4.3 PENETRATION, tenths of a millimeter

(ASTM D 217, DIN ISO 2137)

4.3.1 Worked Penetration, 60 strokes	311	324
4.3.2 Prolonged Worked Penetration, 100,000 strokes (Change from 60 stroke value)	+6%	+40%

4.4 OXIDATION STABILITY

(ASTM D 942 or DIN 51808, 100hr at 99 °C)

40 kPa 20 kPa

4.5 WATER WASHOUT

(ASTM D 1264, DIN 51807 T02, 38 °C)

2.5% 8.6%

4.6 OIL SEPARATION DURING STORAGE

(DIN 51817, IP121, 168hr, 25 °C)

2% 4%

4.7 LOW TEMPERATURE TORQUE

(IP 186)

Starting torque, -35 °C	185mNm	—
-50 °C	—	124mNm
Running torque -35 °C	120mNm	—
-50 °C	—	70mNm

4.8 INTERFACE COMPATIBILITY**4.8.1 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 D 4289, DIN 53505, DIN 53504,
SAE AMS 3217/2A, NBR-L, 70 hrs, 150 °C)

Note: Not tested for initial application of this grease. Grease must be tested for elastomer compatibility when used for additional applications that come in contact with polymers such as NBR.