



GREASE, UNIVERSAL JOINT

WSS-M1C147-B

1. SCOPE

The material defined by this specification is grease consisting of a uniform blend of refined mineral oil, lithium 12 hydroxy stearate soap, extreme pressure and anti-wear additives, and rust inhibitors.

2. APPLICATION

This specification was released originally for grease used to lubricate universal joint needle bearings and is currently used for axle applications.

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

Green

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

300 - 320

3.4 DROPPING POINT

(ASTM D 566 or ASTM D 2265, DIN ISO 2176)

177 °C, min

3.5 BASE OIL VISCOSITY

3.5.1 Viscosity At 40 °C,
(ASTM D 445, DIN 51562)178.0 - 216.2 mm²/sec3.5.2 Viscosity At 100 °C,
(ASTM D 445, DIN 51562)14.26 mm²/sec3.5.3 Viscosity Index
(ASTM D2270)

80 min

3.6 FOUR BALL WEAR

(ASTM D 2266, DIN 51350 T 5
2h, 1200 rpm, 40 Kg, 75 °C)

0.50 mm, max

3.7 OIL SEPARATION DURING STORAGE

(ASTM D 1742 or Federal Standard
791C, Method 321.3, DIN 51817)

10% max

Date	Action	Revisions
2010 06 15	Revised	See summary of revisions L. Schmalz, NA
2004 01 30	Revised	Para 3.0 inserted; para 3.1, 3.2, 3.3, 3.5, 3.6 and 4 deleted
1999 11 22	Activated	

**3.8 FILM STRENGTH DURABILITY**
(FLTM BJ 104-04)

3.8.1	Test Time 8h, 10 lb (4.6 KG) Load	No Score
3.8.2	Scar Width After 8h Test	1.4 mm max

4. GENERAL INFORMATION

This information given below is provided for clarification and assistance in meeting the requirements of this specification. Grease approved to this specification should have the following typical properties.

4.1 LITHIUM THICKENER (ASTM D 128)	5-9%
4.2 FILLER (MOLYVAN "A")	3% min
4.3 MINERAL OIL (ASTM D 128)	85% min
4.4 PROLONGED WORKED PENETRATION, (ASTM D 217, DIN ISO 2137, 100,000 strokes)	+/- 15% max change from 60 stroke result
4.5 OXIDATION STABILITY (ASTM D 942, 1000 hr at 100 °C, or DIN 51808)	269 kPa loss
4.6 COPPER CORROSION, (ASTM D 4048)	3b max
4.7 WATER WASHOUT (ASTM D 1264, DIN 51807 T02)	10% max
4.8 INTERFACE COMPATIBILITY	

Production representative materials specific to the application should be used for the following tests.

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 when used for additional 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.