



GREASE, PFPE BASE OIL, PTFE THICKENER

WSS-M1C283-A1

1. SCOPE

The material defined by this specification is a NLGI Grade 2 synthetic lubricating grease consisting of a perfluoropolyether (PFPE) base oil and thickened with polytetrafluoroethylene (PTFE).

2. APPLICATION

This specification was released originally for grease used on bearings and seals, to eliminate squeak and rattle noises, proposed to be used at a wide temperature range from -20 °C up to 240 °C and is resistant to aggressive environments.

3. REQUIREMENTS

3.1 APPROVED SOURCES

The approved source for this specification is ExxonMobil Mobil SHC PF 462.

3.2 WORKED PENETRATION, tenths of a millimeter 265 – 295
(ASTM D217, DIN ISO 2137, 60 stroke)

3.3 BASE OIL VISCOSITY

3.3.1 Kinematic Viscosity at 40 °C 414 – 450 mm²/s

3.3.2 Kinematic Viscosity at 100 °C. 38 – 46 mm²/s

4. GENERAL INFORMATION

The 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 COLOR White
(Visual)

4.2 BASE FLUORINATED POLYMER 27 – 33%
(According to formulation, ASTM D128)

4.3 OIL VISCOSITY INDEX 130 min
(ASTM D2270)

4.4 DROPPING POINT Not Applicable
(ASTM D556, ASTM D2265, DIN ISO 2176)

The test gives inaccurate results for solid thickened greases and would show a drop of oil from the tester at temperatures under 200 °C, even for greases that function well at higher temperatures.

4.5 WATER WASHOUT <1%
(ASTM D1264, DIN 51807 T02, 79 °C)

Date	Action	Revisions	Rev. 0
2018 04 18	Released		



**4.6 OIL SEPARATION FROM GREASE**
(ASTM D6184, 99 °C for 30 hours)

4.35% max

4.7 EVAPORATION
(ASTM D2595, 22 hours)

At 121 °C

< 0.14%

At 204 °C

< 3.00%

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. PFPE / PTFE lubricants are generally inert to painted surfaces. 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. PFPE / PTFE lubricants are generally inert to plastics. 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)

Note: Not tested for initial application of this grease. PFPE / PTFE lubricants are generally inert to rubber, except for those based on PFPE. 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.

4.9 SUPPLIER'S ONGOING RESPONSIBILITY

All materials must be equivalent in all characteristics to the material upon which approval was originally granted.

Prior to making any changes to the material originally approved, whether or not such changes affect the material's ability to meet the specification requirements, the supplier shall notify the affected Supplier Technical Assistance (STA), Purchasing, and Materials Engineering activities of the proposed changes (with reasons) by submission of a completed Suppliers Request for Engineering Approval, SREA.

For parts and components using Ford Engineering Material Specifications, all samples tested to the specifications for Design Verification (DV), Production Verification(PV) and Production Part Approval Process (PPAP) sign off must be kept until Job 1.

4.10 RESTRICTED SUBSTANCE MANAGEMENT STANDARD

Substance restrictions imposed by regulations or Company direction applies to the materials addressed by this document. The restrictions are identified in the Restricted Substance Management Standard WSS-M99P9999-A1, which is updated yearly. It is the supplier's responsibility to comply with this standard on a continuing basis through IMDS and or GMAP reporting.