



LUBRICANT, LIQUID, TIRE MOUNTING

WSS-M99B186-A

1. SCOPE

The material defined by this specification is a ready-to-use glycol-based, liquid, synthetic lubricant of uniform composition.

2. APPLICATION

This specification was released originally for material used as a lubricant for mounting tires.

3. REQUIREMENTS

3.1 APPROVED SOURCES

This specification requires the use of approved sources. Only the sources identified on the Ford Approved Source List (ASL) can be used when this specification is listed on the drawing, CAD file, or other documents. The list of approved sources is located within Ford at www.mats.ford.com or available externally through a Ford Materials Engineer.

3.2 COLOR

Clear

3.3 pH (ASTM E 70)

11.0 – 12.5

3.4 VISCOSITY (ASTM D 1200, Ford #4 cup, 23 +/- 2 °C)

9 – 12 seconds

3.5 CONCENTRATE STABILITY (Centrifuge, 10mL conical tube, 9mL min volume, 15 minutes at 1,600 RPM)

No Sediment

3.6 EVAPORATION

After dipping a rubber test slab of approximately 115 mm by 30 mm in the uncut solution to a depth of 35 mm, it shall be held vertical for 10 minutes, then placed horizontally for 20 minutes. It shall retain a water wet surface for 15 minutes, and after 20 minutes remain partially transferable (without rubbing) to a blotter or standard paper hand towel. The untouched portion of the panel shall retain all its lubricity as the evaporation proceeds for the next 30 minutes. After 4 hours, the material shall be dry; that is, completely non-transferable to a blotter or standard paper hand towel when placed in contact with the material without rubbing.

3.7 SHELF LIFE

Shall maintain its properties for a period of 1 year when stored in the original, sealed container under ambient conditions.

Date	Action	Revisions	Rev 03
2017 08 11	Revised	See summary of revisions	C. Taylor, NA
2015 10 09	Revised	See summary of revision	C. Macna, NA
2004 07 13	Revised	Para 3.5 revised	G. Stevens



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

4.1 SURFACE TENSION 0.032 – 0.039 N/m
(ASTM D 1331)

4.2 NON-VOLATILES, typical 2.00% by wt.
(ASTM D 460, Method A)

4.3 EFFECT ON RUBBER, Volume Increase 7 % max
(70 h at 23 +/- 2 °C, 60 +/- 5 Shore A durometer, 6 mm, SBR sheet)

4.4 SPECIFIC GRAVITY 1.00 - 1.02
(ASTM D 891, Method C)

4.5 CORROSION

Test Method

Clean 25 mm x 76 mm strips of metals to be tested. Strips shall be immersed one each in a 100 mL test tube containing 15 mL of lubricant test sample. The test tube shall be lightly stoppered with a cork stopper to prevent evaporation, supported in a beaker, and then placed in an oven at 70 +/- 2 °C for 70 h. The strips shall be examined under magnification of 20X for evidence of corrosion.

4.5.1 Parker or Q-panel-unpolished steel
No pitting, etching or visible corrosion on the submerged surface.

4.5.2 A356 aluminum
No pitting, etching or visible corrosion on the submerged surface.

4.6 COEFFICIENT OF STATIC FRICTION TEST

4.6.1 Wet 0.3 max

Test Procedure: Two rubber test slabs shall be prepared from 60 durometer, 6 mm, SBR rubber sheet, which conforms to compositions agreed upon between supplier and Ford Motor Company. The rubber test slabs shall be 76 mm by 100 mm with a 3 mm diameter hole centered on a line 6 mm from one end. An additional steel test panel 152 mm by 152 mm by 1 mm (Parker or Q-panel-unpolished) shall be used as bottom plate for the test. Both the rubber test slab and the steel panels shall be thoroughly cleaned with water. A thin layer of lubricant shall then be applied to one surface of both the steel test panel and the rubber test slab. The steel test panels shall be clamped, lubricated side up, in a stationary position on a flat, horizontal surface and the rubber test slab shall be placed, lubricated side down, horizontally on the metal test panel. A steel plate, of known weight, measuring 75 mm by 100 mm shall be placed unlubricated on the top of the rubber test slab.

A standard kilogram weight shall be placed on top of, and centered on, the small steel plate. A cord of 305 mm to 610 mm in length is then attached through the hole in the rubber test slab. This cord shall be placed over a pulley which is so placed that the cord is held horizontally in line with the rubber test slab between the slab and the pulley. The pulley shall be of such construction and so lubricated as to turn freely under load. Force (weight) shall then be applied to the free end of cord in small increments not to exceed