

**GREASE, LITHIUM SOAP, SYNTHETIC HYDROCARBON,  
LOW SEPARATION****WSS-M1C89-A1****1. SCOPE**

The material defined by this specification is a lithium soap thickened, heavy viscosity synthetic hydrocarbon grease that is a NLGI grade 2.

**2. APPLICATION**

This specification was released originally for grease used to eliminate noise from microcellular urethane jounce bumpers on shocks and struts. This material has a UV Tracer added.

**2.1 LIMITATIONS**

Check elastomer compatibility before using with diphenylmethane diisocyanate (MDI) microcellular bumpers.

**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](http://www.mats.ford.com) or available externally through a Ford Materials Engineer.

This specification was released to allow this material to be purchased by Ford Purchasing for use in a Ford facility. The specification number is also the part number in WERS.

The approved source for this specification is Nye Rheolube 393. North American Tox: 197663.

|            |                                                                                            |          |
|------------|--------------------------------------------------------------------------------------------|----------|
| <b>3.2</b> | <b>COLOR</b><br>(Visual)                                                                   | Dark Red |
| <b>3.3</b> | <b>UNWORKED PENETRATION, tenths of a millimeter</b><br>(ASTM D217, DIN ISO 2137, 0 stroke) | Report   |
| <b>3.4</b> | <b>WORKED PENETRATION, tenths of a millimeter</b><br>(ASTM D217, DIN ISO 2137, 60 stroke)  | Report   |
| <b>3.5</b> | <b>OIL SEPARATION DURING STORAGE</b><br>(ASTM D1742, DIN 51817 or FTMS 791 C 321.3)        | 1% max   |
| <b>3.6</b> | <b>EVAPORATION</b><br>(ASTM D972 or CTM-1 24h at 100 C)                                    | 1% max   |

| Date       | Action   | Revisions | Rev. 0 |
|------------|----------|-----------|--------|
|            |          |           |        |
|            |          |           |        |
| 2017 01 04 | Released |           |        |

**Documents**  
A. Wedepohl / N. Hortsch, NA  
Document Sharing Hub



#### 4. GENERAL INFORMATION

This information given below is provided for clarification and assistance in meeting the requirements of this specification. Contact [gmfs@ford.com](mailto:gmfs@ford.com) for questions concerning Engineering Material Specifications.

Jounce bumper grease should have the following attributes.

- the grease should not washout
- the grease should not separate, allowing the oil to run down the shock body and appear as a leak.
- must be compatible with jounce bumper material -microcellular urethane

The requirements section contains tests performed on each batch of grease manufactured. Grease approved to this specification should have the following typical properties.

##### 4.1 BASE OIL VISCOSITY

(ASTM D445, DIN 51562, ISO 3104)

|                                     |                         |
|-------------------------------------|-------------------------|
| 4.1.1 Kinematic Viscosity at 100 °C | 580 mm <sup>2</sup> /s  |
| 4.1.2 Kinematic Viscosity at 40 °C  | 6150 mm <sup>2</sup> /s |

##### 4.2 WATER WASHOUT

(ASTM D1264, DIN 51807 T02, 40 °C)

< 5.2 %

##### 4.3 INTERFACE COMPATIBILITY

4.3.1 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.

4.3.2 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

4.3.3 Elastomer Compatibility, naphthalene diisocyanate (NDI) based microcellular urethane  
(DIN EN ISO 1798, 3 days at 100°C)

|                                 |       |
|---------------------------------|-------|
| 4.3.3.1 Tensile strength change | -2.8% |
| 4.3.3.2 Elongation change       | +7%   |

##### 4.4 APPROVAL OF MATERIALS

Suppliers desiring approval of their materials shall first obtain an expression of interest from Purchasing, Design or Product Development, and Materials Engineering. The supplier shall submit a completed copy of their laboratory test reports, signed by a qualified and authorized representative of the test facility, demonstrating full compliance with all the requirements of the Material Specification. Tested material samples must be available for review upon request and kept for a minimum of one year. Upon request, the supplier will review the associated quality control documents (Process Failure Mode and Effects Analysis, Control Plans, Certification testing) with Ford.