Ford Engineering Material Specification

Material Name
GREASE, HIGH TEMPERATURE - NLGI NO. 2

Specification Number
ESL-M1C173-A

1. SCOPE

The material defined by this specification is a grease compounded to give the desired characteristics of a long life high temperature lubricant. This grease shall be a homogeneous product, free from oil separations, abrasive fillers, and be non-corrosive to the lubricated parts in service.

2. APPLICATION

This specification was released originally for grease used as a lubricant for driveshaft slip yokes, U-joints and wheel bearings.

3. REQUIREMENTS

3.1	MOISTURE, % max (ASTM D 95)	0.25
3.2	THICKENER, % (ASTM D 128)	10 - 15
3.3	DROPPING POINT, °C min (ASTM D 566)	260
3.4	MINERAL OIL REQUIREMENTS	
3.4.1	Viscosity at 37.8°C, min (ASTM D 445)	183 cSt (mm^2/S)
3.4.2	Viscosity at 98.9°C (ASTM D 445)	14.2 - 17.0
3.4.3	Pour Point °C max (ASTM D 97)	-15
3.4.4	Flash Point °C min (ASTM D 92)	250
3.4.5	Fire Point °C min (ASTM D 92)	285
3.5	CONSISTENCY STABILITY, (mm/10) (ASTM D 217) 60 strokes worked	265 - 295
3.6	OXIDATION STABILITY (ASTM D 942)	
3.6.1	Pressure drop in 1000 hrs, kPa, (psi), max	345 (50)

Date	Para. No.	Revisions
1979 09 12		Released TJR-OHA-620

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3.6.2	Penetration (after oxidation), % increase max (ASTM D 1403)	25
3.7	FILM STRENGTH DURABILITY, No Score, min hrs (FLTM BJ 1-2)	1
3.8	FOURBALL WEAR TEST, Scar dia, mm max	1
3.9	WATER WASHOUT, % max (ASTM D 1264, 80°C)	6

3.10 STORAGE STABILITY

The worked penetration of the material after being stored for a six month period at a temperature of 38°C ± 2°C in an oil tight container shall not have changed from the original worked penetration of the material by more than 30 points.

3.11 SUPPLIER'S RESPONSIBILITY

Material supplied to this specification must be equivalent to that originally approved. Changes in formulation or processing shall not be made without prior approval as described in Supplier Procedure I-A.

4. APPROVAL OF SUPPLIERS

Suppliers to this specification must be approved by the affected product engineering office. Procedure for gaining approval of a specific material to a new/existing ES-M specification is contained in Supplier Procedure I-A. Approved new suppliers will be added to the Engineering Materials Approved Source List.

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