

NAVISTAR, INC.		
TMS (TRUCK MATERIAL SPECIFICATION)		NUMBER: TMS-6814
TITLE: Lubricant, Corrosion Control (Disk Brake)	CURRENT REV No: 0908	DATE: August 2009
WRITTEN/EDITED BY: Materials Engineering	APPROVED BY: Materials Engineering	SUPERSEDES ISSUE : Rev. D-1 - August 2001
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<i>This specification may involve hazardous materials, equipment, and procedures. This specification does not purport to address all of the safety issues associated with its use. The user is responsible to consult appropriate safety and health practices and to determine the applicability of regulatory limits prior to use.</i>		
Change Notice: Replaced "International Truck and Engine Corporation" with "Navistar, Inc." per corporate directive; added section 2.1 "Restricted Chemical Substances"; added section 10 "Technical Information"; editorial changes.		
Reference: File 30-8	Keywords: Lubricant; Disc Brake	

1.0 APPLICATION

This specification covers a National Lubricating Grease Institute (NLGI) Grade #1-1/2 non-filler grease suitable for lubrication of disk brake caliper and anchor plate slides and to provide long-term corrosion protection in these areas.

2.0 SCOPE

This specification covers the property and performance requirements, quality, source approval and quality control, and approved sources.

2.1 Restricted Chemical Substances

Effective January 1, 2007, all product supplied to the requirements of this specification must comply with the requirements of the CEMS B-50 specification.

3.0 REFERENCE DOCUMENTS

Unless otherwise specified the latest issue of all referenced standards shall apply. The following Specifications, Standards, and Regulations are referenced in this specification.

Quality System Standard <i>ISO 9001 or TS-16949</i>	ASTM D 97	ASTM B 117
NAVISTAR Mfg. Standard MS-D-13	ASTM D 217	ASTM D 942
CFR Title 29, Part 1910	ASTM D 445	ASTM D 1264
NAVISTAR CEMS B-50	ASTM D 566	ASTM D 1743
ASTM D 92		

4.0 REQUIREMENTS

4.1 General

This material shall consist of a mixture of mineral oil and an inorganic gel (calcium complex) base.

4.2 Color

Color shall be brown.

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4.3 Cone Penetration (ASTM D 217)

After 60 strokes, the penetration shall be 290-320. After 1×10^6 strokes, the maximum allowable change shall be ± 20 .

4.4 Dropping Point (ASTM D 566)

Shall be 260°C (500°F) minimum.

4.5 Water Washout (ASTM D 1264)

Shall exhibit 5% max loss when tested at 80°C (175°F).

4.6 Rust Prevention Rating (ASTM D 1743)

Distilled Water - 1 maximum

5% Sea Water - 1 maximum

4.7 Salt Spray (ASTM B 117)

A 4" x 12" polished steel panel with a 4 mil film of grease shall not exhibit corrosion after 500 hours exposure.

4.8 Oxidation Stability (ASTM D 942)

After 100 hours at 99°C (210°F) shall exhibit a maximum pressure drop of 34.5 kPa (5 psi).

4.9 Mineral Oil Properties

4.9.1 Viscosity (ASTM D 445)

Shall be 10-16 cSt (59-82 SUS) at 100°C (210°F).

4.9.2 Pour Point (ASTM D 97)

Shall be -15°C (+5°F) maximum.

4.9.3 Flash Point (ASTM D 92) shall be 215°C (419°F) minimum.

4.10 Vertical Sag Test

4.10.1 Material

(a) One - 4" x 12" (approx.) cold rolled plain steel panel with a centered holed at one end for hanging (available from Advanced Coatings Technologies, Inc., 273 Industrial Drive, Hillsdale, MI 49242).

(b) Triangular grease bead with a 1/2" height and 1/2" base across the width of the panel.

(c) Forced convection oven capable of holding 125°C $\pm$ 3°C (260° $\pm$ 5°F)

4.10.2 Method

Scribe a horizontal line on the upper third of the test panel and locate the grease sample such that the lower edge of the grease is just above the horizontal line when the panel is hung vertically. Hang the panel vertically in the oven for 70 hours at 125°C (260° F).

4.10.3 Required

The grease shall not sag more than 12 mm (0.5 inch).

5.0 QUALITY

Material supplied to this specification shall be suitable for the intended application, clean and free from foreign materials and dirt, and adequately packaged and identified.

6.0 SOURCE APPROVAL AND QUALITY CONTROL

6.1 Supplier Requirements

All suppliers to Navistar are required to be registered to ISO 9001 Quality System Requirements. Navistar will also accept TS-16949 registration as long as the supplier can also fulfill all AIAG PPAP (Production Part Approval Process) documentation and approval requirements. Suppliers must

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