

INTERNATIONAL TRUCK AND ENGINE CORPORATION		
ENGINEERING MATERIAL SPECIFICATION		NUMBER: CEMS B-22
TITLE: Gear Lubricants		CURRENT ISSUE DATE: August 2007
WRITTEN/REVIEWED BY: Material Engineering	APPROVED BY: Material Engineering	SUPERSEDES ISSUE OF: June 2001
PRINTED COPIES OF THIS DOCUMENT MUST BE VERIFIED FOR CURRENT REVISION		
<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: Added Sections 2.1, 12.0, (g) footnote, and edited Sections 4.0, 6.1 and 9.1.		

1.0 SCOPE

This specification covers the Company's requirements for extreme pressure grades of gear lubricants.

2.0 INTRODUCTION

Gear lubricants are used to reduce friction and noise in gear boxes and joints. It is important that a minimum hydrodynamic layer of lubricant be maintained throughout the gear mesh.

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 CONTENTS

	PAGE
REFERENCE DOCUMENTS	1
PROPERTY REQUIREMENTS	2
QUALITY	2
METHODS OF TEST	2
SOURCE APPROVAL AND QUALITY CONTROL	3
DESIGNATION ON DRAWING AND PURCHASE ORDERS	3
PACKING AND SHIPPING	3

4.0 REFERENCE DOCUMENTS

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

Quality System Standard ISO 9001 or TS-16949	ASTM D 97	ASTM D 2273
INTERNATIONAL Manufacturing Standard D-13	ASTM D130	ASTM D 2983
CFR Title 29, Part 1910	ASTM D 341	ASTM D 5704
INTERNATIONAL CEMS B-50	ASTM D 445	ASTM STP 512A, Method L-33
INTERNATIONAL CEMS BT-9	ASTM D 471	ASTM STP 512A, Method L-37
INTERNATIONAL CEMS BT-13	ASTM D 892	ASTM STP 512A, Method L-42
INTERNATIONAL CEMS BT-44	ASTM D 1500	FSTM STD 791C, Method 3456
ASTM D 92	ASTM D 1552	FSTM 2504
ASTM D 95	ASTM D 2261	SAE J300
	ASTM D 2270	SAE J306

This document is restricted and may not be sent outside International Truck and Engine Corporation or reproduced without permission from Corporate Technical Standards. Suppliers are required to assume all patent liability. ©2007 International Truck and Engine Corp.

AUGUST 2007

NUMBER: CEMS B-22	TITLE <i>Gear Lubricants</i>	CURRENT ISSUE DATE: August 2007
-----------------------------	--	---

5.0 CLASSIFICATION OR DESIGNATION

Gear lubricants are classified by viscosity and levels of additives.

6.0 PROPERTY REQUIREMENTS

Material purchased to this specification will conform to the appropriate requirements shown in Table I (page 5). All test designations refer to the latest issue unless otherwise stated.

6.1 Obsolete Lubricant Grades: International regular gear lubricant Grades 81HR and 90HR have been deleted. These grades are no longer used in factory fill applications.

7.0 QUALITY

Extreme Pressure Gear Lubricants, GRADE 135HEP, will contain refined oils and additives. They will be free from resins, tars, uncombined sulfur or any other objectionable compounds.

7.1 Engineering Qualification

Production material can be furnished under this specification only after formal Engineering Qualification. The appropriate purchasing department (refer to the Corporate Purchasing Delegation Manual) will request Materials Engineering, Truck Development and Technology and Center or a Materials Engineering designated facility, to conduct the engineering qualification tests with the supplier furnishing all required samples. Material submitted for qualification will be accompanied by detailed test information and also by certification that the material meets all requirements of this specification.

7.2 After the material has been tested by Materials Engineering, the design engineering departments will be notified and, if appropriate, invited to conduct performance tests as deemed necessary. On completion of these tests, the purchasing departments involved and all engineering departments will be notified that the material has been either qualified or rejected.

7.3 Material subsequently supplied to this specification will have the same formulation as the qualification samples. No change in composition or method of manufacture will be permitted without approval of the appropriate purchasing and design engineering departments and Materials Engineering. (Refer to the "Engineering Qualification" section in Volume 1 of the INTERNATIONAL Engineering Material Specifications Books for an outline of how this procedure works.) Control limits for sulfur and phosphorus must also be furnished. All tests will be conducted and evaluated at the supplier's expense with required parts made available to International Truck and Engine Corp. for inspection. However, these tests may be waived providing that proof of MIL-L-2105E qualification for Grade 135HEP SAE 90, Grade 135HEP SAE 80W-90 and Grade 135 HEP SAE 85W-140 materials is provided.

8.0 METHODS OF TEST

8.1 International BT Methods are available from Information Handling Service (IHS), 15 Inverness Way East, Englewood, CO, 80112-5776. Tel. 1-800-854-7179.

8.2 CRC procedures are available from the Coordinating Research Council, 30 Rockefeller Plaza, New York, NY 10020.

8.3 FTM tests are described in detail in: "Federal Test Method Standard No. 791B - Lubricants, Liquid Fuels and Related Products; Methods of Testing", issued by General Services Administration, Business Service Center, Region 3, Seventh and D Streets SW, Washington, D.C. 20407.

This document is restricted and may not be sent outside International Truck and Engine Corporation or reproduced without permission from Corporate Technical Standards. Suppliers are required to assume all patent liability. ©2007 International Truck and Engine Corp.

AUGUST 2007

NUMBER: CEMS B-22	TITLE <i>Gear Lubricants</i>	CURRENT ISSUE DATE: August 2007
-----------------------------	--	---

9.0 SOURCE APPROVAL AND QUALITY CONTROL

9.1 Supplier Requirements

All suppliers to International Truck and Engine are required to be registered to ISO 9001 Quality System Requirements. International 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 maintain their certification with an accredited registrar and must furnish copies of registration certificates to their International Corporate Buyer upon request.

9.2 Approval

Parts supplied against contracts or purchase orders citing this specification shall be equivalent in all respects to those samples that were approved by the purchaser. No changes in formulation or processing practices are permitted without approval. In the event that changes in material, properties, processing practices, construction, color, or labeling of the product are required, the supplier shall notify Materials Engineering, TDTC and International Purchasing and Supplier Development of the proposed change(s). Test data indicating conformance to all requirements of this specification, test samples, and new or amended or updated Material Safety Data Sheet(s) (MSDS), in accordance with CFR Title 29, Part 1910 shall be submitted with the request for change.

9.3 Process Control

The supplier shall either perform and report results of tests on specific lots of parts produced using ISO 9001 or TS-16949 guidelines, or provide statistical evidence of the lot having been produced in a state of statistical control and with a process capable of providing all required properties. The part supplier and the plant metallurgist and/or the quality control manager of the using International plant may determine testing and reporting requirements on specific products.

10.0 DESIGNATION ON DRAWINGS AND PURCHASE ORDERS

Examples: Extreme Pressure Gear Lubricant, Grade 135HEP
SAE 85W-140, CEMS B-22

11.0 PACKING AND SHIPPING

Packaging and identification will be in accordance with Manufacturing Standard D-13.

When delivered in bulk quantities, the material will be shipped in containers clearly marked with the following information: INTERNATIONAL designation, name of supplier, formula number or code, batch number and date of manufacture. These markings will be at least 25 mm (1 inch) high. When packaged for retail sale, the material will be supplied in containers approved and with identification and markings in accordance with requirements set forth by the Parts Marketing Division of the International Parts Marketing Operation at Cantera in Warrenville, Illinois.

This document is restricted and may not be sent outside International Truck and Engine Corporation or reproduced without permission from Corporate Technical Standards. Suppliers are required to assume all patent liability. ©2007 International Truck and Engine Corp.

AUGUST 2007