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| <b>NAVISTAR, INC.</b>                                                                                                                                                                                                                                                                                                                   |                                  |                                             |
| <b>Material, Parts, and Process Specifications<br/>(MPAPS)</b>                                                                                                                                                                                                                                                                          |                                  | NUMBER:<br><b>MPAPS B-44</b>                |
|                                                                                                                                                                                                                                                                                                                                         |                                  | Former Designation: <b>CEMS B-44</b>        |
| TITLE:<br><b>Coolant Concentrate, Ethylene Glycol Base, for Engines Requiring<br/>GMW3420 and/or Ford WSS-M97B44-D Approval</b>                                                                                                                                                                                                         |                                  | CURRENT REV No.:<br><b>1711</b>             |
|                                                                                                                                                                                                                                                                                                                                         |                                  | DATE:<br><b>Nov. 2017</b>                   |
| WRITTEN/EDITED BY:<br><b>H. DeBaun</b>                                                                                                                                                                                                                                                                                                  | APPROVED BY:<br><b>R. Goluch</b> | SUPERSEDES:<br><b>Rev 1610 October 2016</b> |
| <b>PRINTED COPIES OF THIS DOCUMENT MUST BE VERIFIED FOR CURRENT REVISION</b>                                                                                                                                                                                                                                                            |                                  |                                             |
| <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> |                                  |                                             |

## **1.0 APPLICATION**

This specification covers general requirements for ethylene glycol base coolant suitable for factory fill of Navistar products requiring coolant meeting GMW3420 (formerly GM6277M) and/or Ford WSS-M97B44-D, and also for sale under the DEX-COOL trademark.

## **2.0 SCOPE**

The specification covers coolant used in factory fill for products requiring coolant that meets GMW3420 and/or Ford WSS-M97B44-D. This coolant is also merchandised by the Navistar Parts Marketing Operation.

## **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 MPAPS 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 Standard ISO 9001 or TS-16949   | ASTM D1122 | ASTM D3306   |
| NAVISTAR Packing and Shipping Std. D-13 | ASTM D1123 | ASTM D3634   |
| CFR Title 29, Section 1910              | ASTM D1177 | ASTM D4340   |
| NAVISTAR MPAPS B-50                     | ASTM D1287 | ASTM D6129   |
| ASTM D92                                | ASTM D1384 | ASTM D6130   |
| ASTM D1119                              | ASTM D1881 | ASTM E1177   |
| ASTM D1120                              | ASTM D1882 | GMW3420      |
| ASTM D1121                              | ASTM D2809 | WSS-M97B44-D |

## **4.0 CLASSIFICATION OR DESIGNATION**

The engine coolant covered in this specification is a long life ethylene glycol based coolant, with organic additives.

## **5.0 REQUIREMENTS**

Material purchased to this specification will conform to the requirements shown in Table 1, ASTM D3306, GMW3420, and Ford WSS-M97B44-D.

**5.1 Compatibility:** Mixture in any concentration with other products found satisfactory under this specification will not adversely affect the performance unless the engine or owner's manual states otherwise.

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| <b>NUMBER:</b><br><b>MPAPS B-44</b> | <b>TITLE:</b><br><b>Coolant Concentrate, Ethylene Glycol Base, for Engines<br/>Requiring GMW3420 and/or Ford<br/>WSS-M97B44-D Approval</b> | <b>REVISION:</b><br><b>1711</b> |
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**5.2 Purity:** The material purchased to this specification will be substantially free from suspended matter and will not have an objectionable odor.

**5.3 Storage:** Material supplied to the requirements of this specification will have a minimum storage life of one year.

## **6.0 QUALITY**

Products purchased under this specification will be ethylene glycol base antifreezes suitable for the use intended. Suppliers will qualify their products for use in all parts of the country in which they are intended to be sold.

### **6.1 Dilution:**

**6.1.1 Aftermarket Product:** Water used to dilute the coolant system will be fully deionized or distilled.

**6.1.2 Production Product:** Water used to dilute the coolant system will be fully deionized or distilled, unless otherwise approved by the Quality Control Department of the using Plant, Materials Engineering, and by the vendor.

## **7.0 QUALIFICATION**

Engineering qualification of sources is required in advance of production shipments. When requested by Purchasing & Logistics, the supplier will furnish samples to Materials Engineering for engineering qualification which includes approval by the controlling engineering departments, including performance tests as required. Material submitted for qualification will be accompanied by detailed test information and also by certification that the material meets all requirements of this specification.

### **7.1 Quality Control Plan**

A Quality Control Plan for products supplied to the requirements of this specification will be established by mutual agreement between NAVISTAR and the supplier. Unless specific exception is noted, the following characteristics, where applicable\*, shall be included in the plan as features for management by statistical process control.\*\*



Specific Gravity

\* Other characteristics for inclusion in the control plan may be specified on the engineering drawing and/or purchase order.

\*\* See NAVISTAR Engineering Design Standard A-16

## **8.0 METHODS OF TEST**

**8.1** Refer to Section 12.0 for information on obtaining copies of Navistar specifications.

**8.2** Code of Federal Regulations (CFR) is printed in the Federal Register available from the United States Government Printing Office in Washington, D.C. Note: Copies of the CFR are often available in local public libraries.

**8.3** ASTM Standards are available from: American Society for Testing and Materials, 1916 Race Street, Philadelphia, PA 19103 (website: <http://www.astm.org> )

## **9.0 SOURCE APPROVAL AND QUALITY CONTROL**

### **9.1 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

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