

SPECIFICATION FOR ANTIFREEZE, FOR GASOLINE AND DIESEL ENGINES

This specification is released for procurement purposes until revised or rescinded.

SCOPE

This specification covers conventional service life and extended service life antifreeze, ethylene glycol and propylene glycol based, and virgin and recycled types. However, recycled antifreeze produced by on-site recycling is not covered by this specification.

I. CLASSIFICATION

The classes of antifreeze are as defined below.

Class 1: Conventional service life ethylene glycol antifreeze for automotive engines, virgin

Class 2: Universal fully-formulated ethylene glycol antifreeze, virgin

Class 3: Extended life ethylene glycol antifreeze for diesel engines, virgin or recycled

Class 4: Extended life organic acid technology ethylene glycol antifreeze, virgin

Class 5: Extended life hybrid organic acid technology ethylene glycol antifreeze, virgin

Class 6: Conventional service life ethylene glycol antifreeze, recycled

Class 7: Universal fully-formulated ethylene glycol antifreeze, recycled

II. APPLICABLE SPECIFICATIONS AND STANDARDS

Referenced specifications and standards shall be the latest issue in effect of the date of the Invitation For Bids. Copies of referenced materials may be obtained from the issuing organizations at the addresses shown. The documents below form a part of this specification.

ASTM D 3306	Standard Specification for Ethylene Glycol Base Engine Coolant for Automobile and Light-Duty Service
ASTM D 4985	Standard Specification for Low Silicate Ethylene Glycol Base Engine Coolant for Heavy Duty Engines Requiring a Pre-Charge of Supplemental Coolant Additive (SCA)
ASTM D 6210	Standard Specification for Fully-Formulated Ethylene-Glycol-Base Engine Coolant for Heavy-Duty Engines
ASTM D 6472	Standard Specification for Recycled Glycol Base Engine Coolant Concentrate for Automobile and Light-Duty Service
ASTM E 1177	Standard Specification for Engine Coolant Grade Ethylene Glycol
Caterpillar EC-1	Long Life Engine Coolant Requirements
Chrysler MS 9769	Engine Coolant - Glycol Type - Inhibited - Production and Service Use

GM 6277M Long-Life Automotive Engine Coolant Antifreeze Concentrate--Ethylene Glycol

TMC RP 329 Fleet Purchasing Specification for Nitrite-Containing Ethylene Glycol Base Coolant

American National Standards Institute (ANSI) documents may be obtained from:
American National Standards Institute
25 West 43rd Street, 4 floor
New York, NY 10036 or online at www.ansi.org

Caterpillar documents may be obtained from:
Caterpillar, Inc.
100 NE Adams St.
Peoria, IL 61629 or online at www.cat.com

Chrysler Corporation Engineering Standards may be obtained from:
Chrysler LLC
20770 Westwood Drive
Strongsville, OH 44149 or online at www.techauthority.daimlerchrysler.com

General Motors Engineering Standards may be obtained from:
IHS Inc.
15 Inverness Way East
Englewood, CO 80112 or online at store.ihs.com

The Technology and Maintenance Council documents may be obtained from:
The Technology and Maintenance Council
American Trucking Associations
950 North Glebe Rd., Suite 210
Arlington, VA 22203-4181 or online at tmc.truckline.com

III. REQUIREMENTS

A. All packaged antifreeze shall be properly labeled with respect to brand and product name, and when delivered in bulk shall be accompanied by equivalent documentation suitable for posting near the user's holding containers. All antifreeze sold under this specification shall be properly and currently registered with the Commissioner of Agriculture of the State of North Carolina, in accordance with the North Carolina Antifreeze Law of 1975. All packaged antifreeze shall meet the requirements of the Federal Poison Prevention Packaging Act and Federal and State Product Safety Laws including a child-proof cap and a tamper-proof seal over the opening of the container. Each product shall be prediluted or concentrated as specified in the Invitation for Bids.

B. Class 1 product shall meet the following requirements:
ASTM D 3306
SCAs (supplemental coolant additives) are not required

C. Class 2 product shall meet the following requirements:
Formulated with SCAs for use in diesel engines
TMC RP 329
ASTM D 6210
ASTM D 3306

D. Class 3 product shall meet the following requirements:
Published service life of 6 years or 600,000 miles with use of one-time extender, whichever is first
ASTM D 3306
Caterpillar EC-1
Manufactured using only ASTM E 1177 grade ethylene glycol

- E. Class 4 product shall meet the following requirements:
 - Published service life of 5 years or 150,000 miles, whichever is first
 - Contains 2-ethyl-hexanoic acid
 - Contains no silicates, nitrites, borates, phosphates, nitrates, or amines
 - 100% biodegradeable in its pure, unused condition
 - ASTM D 3306
 - GM 6277M

- F. Class 5 product shall meet the following requirements:
 - Published service life of 5 years or 150,000 miles, whichever is first
 - Contains no phosphates or amines
 - Chrysler MS 9769
 - ASTM D 3306

- G. Class 6 product shall meet the following requirements:
 - ASTM D 3306
 - ASTM D 6472 Manufactured using only ASTM E 1177 grade ethylene glycol
 - SCAs (supplemental coolant additives) are not required

- H. Class 7 product shall meet the following requirements:
 - Requirements list is same as for Class 2 above, except add the following requirement:
 - Manufactured using only ASTM E 1177 grade ethylene glycol

IV. WARRANTY

Manufacturer warrants that all products furnished under this specification shall be of the quality and specifications required herein. Contractor is responsible for administration of warranty claims by the State or its users, and for serving as liaison between the State and the manufacturer during the warranty claim process.

In case of failure of mechanically sound equipment in which such product has been used in accordance with the product manufacturer's recommendations, if the result of a physical and/or chemical analysis of the used product and an inspection of the failed part or parts indicates that such product was the cause of the failure, then manufacturer will be responsible for the cost of all labor, materials, and mechanical components required to correct the damages done to the equipment by use of the product.

V. SERVICE, PARTS, AND MANUALS

The contractor shall provide technical information concerning the proper use of products furnished under this specification when so requested by a user, or on behalf of a user or group of users.

VI. ACCEPTANCE EVALUATION AND QUALITY ASSURANCE

Normally, sampling and testing of specific production lots before delivery will not be required. However, the State reserves the right to perform such sampling and testing of delivered products, at the user's own expense, where deemed advisable. If at any time during the contract, as a result of chemical and/or physical analysis of any product sampled before use, the product is found not to be in full compliance with the contract requirements, the contractor may be immediately removed from the contract, and held in default of contract as described in the terms and conditions of the contract, and the product may be immediately removed from the Qualified Product List (QPL). Likewise, if at any time during the contract, as a result of chemical and/or physical analysis of any product sampled after use it is shown that the product could not have been in such compliance before use, the contractor may be immediately removed from the contract, and held in default of contract as described in the terms and conditions of the contract, and the product may be immediately removed from the QPL.

VIII. ORDERING DATA

Purchasers should exercise any desired option offered herein and should specify the following in the requisition and/or Invitation For Bids, as applicable:

1. Title, number, and date of this specification.
2. The classes of antifreeze required. (See I. CLASSIFICATION)
3. Whether the product is to be furnished in concentrated or prediluted form
4. Whether product is to be furnished in bulk or packaged form, and if packaged, then size thereof.