

AEROSPACE MATERIAL SPECIFICATION



AMS 3021C

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Superseding AMS 3021B

Fluid, Reference for Testing Di-Ester (Polyol) Resistant Material

1. SCOPE:

1.1 Form:

This specification covers a neopentyl polyol ester fluid.

1.2 Application:

This fluid has been used typically to evaluate the ability of elastomeric and other polymeric compounds to conform to designated requirements after immersion in the fluid at a specific temperature and time, as required by an applicable specification, and its use is limited to such applications. This fluid is not intended for operational use in gas turbine engines (See 8.2). Each application should be considered separately.

1.3 Safety - Hazardous Materials:

While the materials, methods, applications, and processes described or referenced in this specification may involve the use of hazardous materials, this specification does not address the hazards which may be involved in such use. It is the sole responsibility of the user to ensure familiarity with the safe and proper use of any hazardous materials and to take necessary precautionary measures to ensure the health and safety of all personnel involved.

2. APPLICABLE DOCUMENTS:

The following publications form a part of this specification to the extent specified herein. The latest issue of SAE publications shall apply. The applicable issue of other publications shall be the issue in effect on the date of the purchase order.

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2.1 SAE Publications:

Available from SAE, 400 Commonwealth Drive, Warrendale, PA 15096-0001.

AMS 2825 Material Safety Data Sheets

2.2 ASTM Publications:

Available from ASTM, 100 Barr Harbor Drive, West Conshohocken, PA 19428-2959.

ASTM D 445 Kinematic Viscosity of Transparent and Opaque Liquids (and the Calculation of Dynamic Viscosity)

ASTM D 664 Neutralization Number by Potentiometric Titration

ASTM D 1218 Refractive Index and Refractive Dispersion of Hydrocarbon Liquids

ASTM D 1298 Density, Relative Density (Specific Gravity), or API Gravity of Crude Petroleum and Liquid Petroleum Products by Hydrometer Method

ASTM D 1744 Water in Liquid Petroleum Products by Karl Fischer Reagent

ASTM D 4057 Manual Sampling of Petroleum and Petroleum Products

3. TECHNICAL REQUIREMENTS:

3.1 Material:

Test fluid shall consist of a refined product of neopentyl ester with 0.5% phenothiazine added as an antioxidant.

3.2 Properties:

The product shall conform to the requirements shown in Table 1; tests shall be performed on the fluid supplied and in accordance with specified test methods.

TABLE 1 - Properties

Property	Requirement	Test Method
3.2.1 Specific Gravity at 16/16 °C (60/60 °C)	0.961 to 0.967	ASTM D 1298
3.2.2 Viscosity at 38 °C (100 °F)	14.60 to 15.60 cst	ASTM D 445
3.2.3 Viscosity at 99 °C (210 °F)	3.0 to 4.0 cst	ASTM D 445
3.2.4 Acid Number, max	0.10 milligrams KOH/gram	ASTM D 664
3.2.5 Water Content by weight, max	0.10%	ASTM D 1744
3.2.6 Refractive Index at 23 °C (73 °F)	1.449 to 1.455	ASTM D 1218
3.2.7 C ₇ Acid Component, min	93%	4.5
3.2.8 Hydroxyl Content, max	0.1%	4.5