



AEROSPACE MATERIAL SPECIFICATION

AMS3021™

REV. F

Issued	1979-08
Reaffirmed	2004-03
Revised	2018-10

Superseding AMS3021F

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

RATIONALE

Revised to change the recommended substitute fluid.

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 issue of the following documents in effect on the date of the purchase order forms a part of this specification to the extent specified herein. The supplier may work to a subsequent revision of a document unless a specific document issue is specified. When the referenced document has been cancelled and no superseding document has been specified, the last published issue of that document shall apply.

2.1 SAE Publications

Available from SAE International, 400 Commonwealth Drive, Warrendale, PA 15096-0001, Tel: 877-606-7323 (inside USA and Canada) or +1 724-776-4970 (outside USA), www.sae.org.

AMS2825 Material Safety Data Sheets

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2.2 ASTM Publications

Available from ASTM International, 100 Barr Harbor Drive, P.O. Box C700, West Conshohocken, PA 19428-2959, Tel: 610-832-9585, www.astm.org.

- ASTM D445 Kinematic Viscosity of Transparent and Opaque Liquids (and the Calculation of Dynamic Viscosity)
- ASTM D664 Neutralization Number by Potentiometric Titration
- ASTM D1218 Refractive Index and Refractive Dispersion of Hydrocarbon Liquids
- ASTM D1298 Density, Relative Density (Specific Gravity), or API Gravity of Crude Petroleum and Liquid Petroleum Products by Hydrometer Method
- ASTM D1744 Water in Liquid Petroleum Products by Karl Fischer Reagent
- ASTM D4057 Manual Sampling of Petroleum and Petroleum Products

2.3 U.S. Government Publications

Copies of these documents are available online at <http://quicksearch.dla.mil>.

- MIL-PRF-7808 Lubricating Oil, Aircraft Turbine Engine, Synthetic Base

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

Paragraph	Property	Requirement	Test Method
3.2.1	Specific Gravity at 60/60 °F (16/16 °C)	0.961 to 0.967	ASTM D1298
3.2.2	Viscosity at 100 °F (38 °C)	14.60 to 15.60 cst	ASTM D445
3.2.3	Viscosity at 210 °F (99 °C)	3.0 to 4.0 cst	ASTM D445
3.2.4	Acid Number, Max	0.10 mg KOH/g	ASTM D664
3.2.5	Water Content by Weight, Max	0.10%	ASTM D1744
3.2.6	Refractive Index at 73 °F (23 °C)	1.449 to 1.455	ASTM D1218
3.2.7	C7 Acid Component, Min	93%	4.5
3.2.8	Hydroxyl Content, Max	0.1%	4.5

3.3 Quality

The fluid, as received by purchaser, shall be free from water, sediment, and suspended matter. The odor shall not be irritating or nauseating. No substance of known toxicity under normal conditions of handling and use shall be present.