SAE The Engineering Society For Advancing Mobility Land Sea Air and Space®
INTERNATIONAL
400 Commonwealth Drive, Warrendale, PA 15096-0001

AEROSPACE MATERIAL SPECIFICATION

SAE AMS 3670/4C

Issued JUL 1984
Revised APR 1995
Reaffirmed DEC 2000

Superseding AMS 3670/4B

Polyamide-Imide Bar, Rod, and Shapes
30% Glass Fiber

1. SCOPE:

1.1 Form:

This specification covers a polyamide-imide plastic filled with glass fiber in the form of molded or extruded bar, rod, and shapes.

1.2 Application:

These products have been used typically for parts requiring high strength, thermal resistance, good dielectric properties, and toughness up to 230 °C (446 °F), but usage is not limited to such applications.

2. APPLICABLE DOCUMENTS:

See AMS 3670.

3. TECHNICAL REQUIREMENTS:

3.1 Basic Specification:

The complete requirements for procuring the product described herein shall consist of this document and the latest issue of the basic specification, AMS 3670.

3.2 Material:

Shall be a molded, polyamide-imide polymer filled with 30% ± 3 by weight glass fiber.

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3.3 Properties:

The product shall conform to the requirements shown in Table 1, determined on injection-molded, post-cured test specimens and in accordance with specified test methods. Specimens for elevated temperature tests shall be held at the test temperature for not less than 30 minutes prior to testing. Values for tensile strength, elongation, flexural strength, and compressive strength shall be reported as the average of three determinations for each test; no individual value shall be less than 90% of the minimum average value specified.

TABLE 1 - Properties

	Property	Requirement	Test Method
3.3.1	Color	Dark Brown, as approved on preproduction sample	
3.3.2	Tensile Strength, min average At 23 °C ± 1 (73 °F ± 2) At 230 °C ± 5 (446 °F ± 9)	 25.0 ksi (172 MPa) 13.0 ksi (89.6 MPa)	ASTM D 1708
3.3.3	Elongation, min average At 23 °C ± 1 (73 °F ± 2)	 4%	ASTM D 1708
3.3.4	Tensile Modulus, min At 23 °C ± 1 (73 °F ± 2)	 1.5 Msi (10.3 GPa)	ASTM D 1708
3.3.5	Flexural Strength, min average At 23 °C ± 1 (73 °F ± 2) At 230 °C ± 5 (446 °F ± 9)	 42.0 ksi (290 MPa) 24.0 ksi (165 MPa)	ASTM D 790 or ASTM D 790M
3.3.6	Compressive Strength, min average At 23 °C ± 1 (73 °F ± 2)	29.0 ksi (200 MPa)	ASTM D 695 or ASTM D 695M
3.3.7	Specific Gravity at 23/23 °C ± 1 (73/73 °F ± 2)	1.58 to 1.63	ASTM D 792 Method A
3.3.8	Water Absorption, max 24.0 to 24.5 hours at 23 °C ± 1 (73 °F ± 2)	 0.40%	ASTM D 570
3.3.9	Heat Deflection Temperature, min 1/8 inch (3.2 mm) specimen 264 psi (1.8 MPa) fiber stress	 260 °C (500 °F)	ASTM D 648
3.3.10	Dielectric Strength, min average Dry, short time test, 1/8 inch (3.2 mm) specimen	700 Volts/mil (27,6 kV/mm)	ASTM D 149
3.3.11	Dissipation Factor, max 10^3 Hz	 0.04	ASTM D 150
3.3.12	Dielectric Constant, max 10^3 Hz	 4.0 to 5.5	ASTM D 150