



AEROSPACE MATERIAL

Society of Automotive Engineers, Inc.
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SPECIFICATION

AMS 3644/1

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Revised

PLASTIC ROD AND BAR, POLYIMIDE Unfilled, Molded

1. SCOPE:

1.1 Form: This specification covers an unfilled polyimide plastic in the form of molded rod and bar.

1.2 Application: Primarily for parts requiring low coefficient of friction, thermal resistance, and toughness up to 260°C (500°F).

2. APPLICABLE DOCUMENTS: Shall be as shown in AMS 3644.

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 3644.

3.2 Material: Shall be an unfilled molded polyimide polymer.

3.3 Properties: Shall conform to the following requirements, determined on the product supplied and in accordance with test methods specified in AMS 3644. Specimens for elevated temperature tests shall be held at the test temperature for not less than 30 min. prior to testing. Values for tensile strength, elongation, flexural strength, and compressive strength shall be the average of three specimens for each test; no individual value shall be less than 90% of the minimum average value specified.

3.3.1 Color Brown, essentially as approved on qualification

3.3.2 Tensile Strength, min avg
At 23°C $\pm$ 1 (73°F $\pm$ 2) 11,000 psi (75.8 MPa)
At 260°C $\pm$ 5 (500°F $\pm$ 9) 5,000 psi (34.5 MPa)

3.3.3 Elongation, min avg
At 23°C $\pm$ 1 (73°F $\pm$ 2) 4%
At 260°C $\pm$ 5 (500°F $\pm$ 9) Not less than 50% of room-temperature value

3.3.4 Flexural Strength, min avg
At 23°C $\pm$ 1 (73°F $\pm$ 2) 15,000 psi (103 MPa)
At 260°C $\pm$ 5 (500°F $\pm$ 9) 8,000 psi (55.2 MPa)

3.3.5 Compressive Strength, min avg
At 23°C $\pm$ 1 (73°F $\pm$ 2) 40,000 psi (276 MPa)
At 260°C $\pm$ 5 (500°F $\pm$ 9) 20,000 psi (138 MPa)

3.3.6 Coefficient of Friction,
At 23°C $\pm$ 1 (73°F $\pm$ 2), 0.20 - 0.40
PV = 25,000 psi-fpm
(876 MPa · mm/s)

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3.3.7 Specific Gravity at 23°/23°C (73°/73°F) 1.42 - 1.44

4. QUALITY ASSURANCE PROVISIONS: See AMS 3644.

5. PREPARATION FOR DELIVERY: See AMS 3644.

6. ACKNOWLEDGMENT: See AMS 3644.

7. REJECTIONS: See AMS 3644.

8. NOTES: None.