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400 Commonwealth Drive, Warrendale, PA 15096-0001

# AEROSPACE MATERIAL SPECIFICATION

Submitted for recognition as an American National Standard

**SAE**

AMS 3901/13

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YARN, ORGANIC FIBER (PARA-ARAMID), HIGH MODULUS  
OY 390 (2689)/22.6 Tensile Strength, 16.5 (114)/840 Tensile Modulus  
2450 Denier, 0.6% Finish

## 1. SCOPE:

### 1.1 Form:

This specification covers one type of organic fiber in the form of yarn. The product shall be formed as a multiplicity of filaments drawn together and gathered into an approximately parallel arrangement.

### 1.2 Classification:

Organic 2450 denier yarn with 390 ksi (2689 MPa) minimum or 22.6 g/d nominal tensile strength and 16.5 Msi (114 GPa) minimum or 840 g/d nominal tensile modulus for use in general purpose composites requiring high tensile strength and high modulus of elasticity in tension.

### 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:

### 2.1 SAE Publications:

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

See AMS 3901.

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**3. TECHNICAL REQUIREMENTS:****3.1 Basic Specification:**

The complete requirements for procuring the organic yarn described herein shall consist of this document and the latest issue of the basic specification.

**3.2 Properties:**

Shall be as shown in Table 1; no individual package, based on the average of three determinations, shall have less than 90% of the lot minimum values specified in 3.2.1 and 3.2.2.

(R) TABLE 1 - Properties

Paragraph	Requirement	Requirement Dry Twisted Yarn	Requirement Impregnated Strand	Test Method
3.2.1	Tensile Strength, minimum	20 g/d	390 ksi (2689 MPa)	4.5.1 or 4.5.2 of AMS 3901
3.2.2	Modulus of Elasticity, minimum	760 g/d	16.5 Msi (114 GPa)	4.5.1 or 4.5.3 of AMS 3901
3.2.3	Denier	2450 ± 80	2450 ± 80	4.5.2 of AMS 3901
3.2.4	Fiber Finish, by weight	0.6% ± 0.4	0.6% ± 0.4	4.5.5 of AMS 3901
3.2.5	Fiber Density	0.052 pound mass per cubic inch ± 0.001 (1.44 grams/cm <sup>3</sup> ± 0.03)	0.052 pound mass per cubic inch ± 0.001 (1.44 grams/cm <sup>3</sup> ± 0.03)	

**3.3 Splicing:**

There shall be not more than two knots per 5-pound (2.3-kg) package in the continuous yarn.

**4. QUALITY ASSURANCE PROVISIONS:**

See AMS 3901.

**5. PREPARATION FOR DELIVERY:**

See AMS 3901.

**6. ACKNOWLEDGMENT:**

See AMS 3901.