AEROSPACE
MATERIAL SPECIFICATIONS

SOCIETY OF AUTOMOTIVE ENGINEERS, Inc. 485 Lexington Ave., New York, N.Y. 10017

AMS 3668

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Revised

POLYTETRAFLUOROETHYLENE MOLDINGS
Premium Grade, As Sintered

1. ACKNOWLEDGMENT: A vendor shall mention this specification number in all quotations and when acknowledging purchase orders.

2. FORM: Molded rods, tubes, and shapes. This specification does not apply to rods and tubes which are greater than 12 in. in dimension parallel to the direction of applied molding pressure, rods less than 3/4 in. in diameter, and tubes which have wall thickness less than 1/2 inch.

3. APPLICATION: Primarily for parts, such as seals, bearings, insulators, and back-up rings, for use up to 260 C (500 F) requiring good mechanical and electrical properties and chemical inertness. When dimensional stability is important, material may be stress-relief annealed but best results will be obtained by machining almost to size, stress-relief annealing, and taking a thin finishing cut.

4. MATERIAL: Shall be molded from virgin polytetrafluoroethylene powder.

5. TECHNICAL REQUIREMENTS:

5.1 General:

5.1.1 Color: Shall be opaque white. Minor discolorations or contamination shall not in themselves be considered as cause for rejection.

5.2 Properties: The product shall conform to the following requirements; tests shall be performed on the product supplied and in accordance with the issue of specified ASTM methods listed in the latest issue of AMS 2350, insofar as practicable.

5.2.1 Tensile Strength at 23 C ± 1 (73.4 F ± 1.8), psi, min	4000	See Note 1
5.2.2 Elongation at 23 C ± 1 (73.4 F ± 1.8), %, min	300	See Note 1
5.2.3 Specific Gravity at 23 C/23 C (73.4 F/ 73.4 F)	2.14 - 2.20	ASTM D792 Add 2 drops of a wetting agent to the water
5.2.4 Dielectric Strength (Short time test), v per mil, min	1000	ASTM D149 (See Note 2)

Note 1. Tensile strength and elongation shall be determined in accordance with ASTM D638, using the microtensile specimen of ASTM D1708. The initial jaw separation shall be 0.875 in. ± 0.005 and the speed of testing shall be 2 in. per minute. Specimens shall be prepared from slices 0.031 in. ± 0.002 thick cut from the product.

Note 2. If possible, specimens shall be 1 in. diameter discs 0.020 in. ± 0.002 thick. If 1 in. diameter specimens cannot be obtained, specimens shall be 1/2 in. in diameter. Test under oil using 1/4 in. diameter corrosion resistant steel electrodes having 1/32 in. radius at edges for 1 in. diameter specimens and 1/16 in. diameter electrodes with rounded edges for 1/2 in. diameter specimens.

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6. QUALITY: The product shall be uniform in quality and condition, clean, smooth, and free from foreign materials and from imperfections detrimental to fabrication, appearance, or performance of parts.

7. TOLERANCES: Unless otherwise specified, the following tolerances apply at 25 - 30 C (77 - 86 F).

7.1 Rod:

Nominal Diameter Inches	Tolerance, Inch Plus Only
0.750 to 2.000, incl	0.062
Over 2.000 to 3.000, incl	0.125
Over 3.000 to 5.000, incl	0.187
Over 5.000 to 12.000, incl	0.250

7.2 Tubing:

Nominal OD or ID Inches	ID Tolerance, Inch Minus Only	OD Tolerance, Inch Plus Only
Up to 2.000, incl	0.062	0.062
Over 2.000 to 3.000, incl	0.125	0.125
Over 3.000 to 5.000, incl	0.187	0.187
Over 5.000 to 12.000, incl	0.250	0.250

7.3 Shapes: As agreed upon by purchaser and vendor.

8. REPORTS:

8.1 Unless otherwise specified, the vendor of the product shall furnish with each shipment three copies of a report stating that the product conforms to the requirements of this specification. This report shall include the purchase order number, material specification number, form or part number, and quantity.

8.2 Unless otherwise specified, the vendor of finished or semi-finished parts shall furnish with each shipment three copies of a report showing the purchase order number, material specification number, contractor or other direct supplier of material, part number, and quantity. When material for making parts is produced or purchased by the parts vendor, that vendor shall inspect each lot of material to determine conformance to the requirements of this specification, and shall include in the report a statement that the material conforms, or shall include copies of laboratory reports showing the results of tests to determine conformance.

9. PACKAGING: Packaging shall be accomplished in such a manner as to ensure that the product, during shipment and storage, will not be permanently distorted and will be protected against damage from exposure to weather or any normal hazard.

10. IDENTIFICATION: Each package shall be permanently and legibly marked with the following:

POLYTETRAFLUOROETHYLENE MOLDINGS
Premium Grade, As Sintered
AMS 3668
SIZE OR PART NUMBER _____
LOT NUMBER _____
PURCHASE ORDER NUMBER _____
QUANTITY _____
MANUFACTURER'S IDENTIFICATION _____