

**AEROSPACE
MATERIAL
SPECIFICATION**

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Superseding AMS3669F	

Polytetrafluoroethylene (PTFE) Sheet, Molded
Premium Grade, As Sintered

RATIONALE

This document has been determined to contain basic and stable technology which is not dynamic in nature.

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1. SCOPE

1.1 Form

This specification covers virgin, unfilled polytetrafluoroethylene (PTFE) in the form of sheet, manufactured by compression molding and sintering.

1.2 Application

This sheet has been used typically for machined parts requiring chemical inertness up to 500 °F (260 °C), with better mechanical properties and/or electrical properties than AMS3667, but usage is not limited to such applications.

1.3 Classification

Sheet covered by this specification is classified as follows:

Type 1 For parts requiring chemical inertness and good mechanical and electrical properties up to 500 °F (260 °C). Testing of all specified properties is required.

Type 2 For parts requiring chemical inertness and good mechanical properties up to 500 °F (260 °C), where electrical insulation is not a consideration. Dielectric strength test (3.3.4) is not required.

1.3.1 Unless a specific type is ordered, Type 1 shall be supplied.

1.4 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 724-776-4970 (outside USA), www.sae.org.

AMS3667 Polytetrafluoroethylene Sheet, Molded, General Purpose Grade, As Sintered

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 D 149 Dielectric Breakdown Voltage and Dielectric Strength of Solid Electrical Insulating Materials at Commercial Power Frequencies
 ASTM D 792 Specific Gravity (Relative Density) and Density of Plastics by Displacement
 ASTM D 4894 Polytetrafluoroethylene (PTFE) Granular Molding and Ram Extrusion Materials

3. TECHNICAL REQUIREMENTS

3.1 Material

Sheet shall be molded from virgin polytetrafluoroethylene (PTFE) powder ASTM D 4894 Polytetrafluoroethylene (PTFE) conforming to ASTM D 4894 Type IV or Type V without admixture of fillers, pigments, or adulterants and shall be sintered. "Virgin" shall mean no previous heat or pressure history

3.2 Color

Shall be predominantly white. Surface discoloration from sintering and/or annealing may vary from white to mottled gray or brown. Small gray, brown, or black spots shall not in themselves be unacceptable provided they have no detrimental effect on the end usage of the finished product.

3.3 Properties

Sheet shall conform to the requirements shown in Table 1; tests shall be performed on the sheet supplied and in accordance with specified test methods, insofar as practicable.

TABLE 1 - PROPERTIES

Paragraph	Property	Requirement	Test Method
3.3.1	Tensile Strength at 73 °F ± 2 (23 °C ± 1), minimum	4000 psi (27.6 MPa)	4.3.1
3.3.2	Elongation at 73 °F ± 2 (23 °C ± 1), minimum	300%	4.3.1
3.3.3	Specific Gravity at 73 °F (23 °C)	2.14 to 2.19	ASTM D 792 Add two drops of wetting agent to the water
3.3.4	Dielectric Strength, applicable only to Type 1 sheet Short Time Test, minimum	600 Volts per mil (23.6 kV/mm)	4.3.2