



AEROSPACE MATERIAL SPECIFICATION

AMS3678™**REV. D**

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Superseding AMS3678C

Polytetrafluoroethylene (PTFE) Moldings and Extrusions
Unfilled, Pigmented, and Filled

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 several grades of virgin polytetrafluoroethylene (PTFE) resin which may be compounded with pigment and fillers in the form of extruded or molded rods or tubes which are sintered after molding or, in the case of extrusions, sintered during the extrusion process.

1.2 Application

These products have been used typically for the production of mechanical parts such as back-up rings, seals, and bearings requiring dimensional stability up to 450 °F (232 °C) with good mechanical properties, but usage is not limited to such applications. Each application should be considered individually.

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

The issue of the following documents in effect on the date of the purchase order forms a part of this specification to the extent supplied 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.

AS4716 Gland Design, O-Ring and Other Elastomeric Seals

AS5857 Gland Design, O-Ring and Other Elastomeric Seals, Static Applications

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 792 Density and Specific Gravity (Relative Density) of Plastics by Displacement

ASTM D 4745 Filled Compounds of Polytetrafluoroethylene (PTFE) Molding and Extrusion Materials

ASTM D 4894 Polytetrafluoroethylene (PTFE) Granular Molding and Ram Extrusion Materials

2.3 U.S. Government Publications

Available from the Document Automation and Production Service (DAPS), Building 4/D, 700 Robbins Avenue, Philadelphia, PA 19111-5094, Tel: 215-697-6257, <http://assist.daps.mil/quicksearch/>.

FED-STD-595 Colors Used in Government Procurement

3. TECHNICAL REQUIREMENTS

3.1 Detail Specifications

The requirements for a specific product shall consist of all requirements specified herein in addition to requirements specified in the applicable detail specification. In case of conflict between requirements of this specification and an applicable detail specification, requirements of the detail specification shall govern.

3.2 Material

All products shall be molded or extruded from fresh virgin or filled polytetrafluoroethylene (PTFE) powder. The virgin PTFE powder used in both unfilled and filled compounds to this specification shall conform to ASTM D 4894, Type II or Type IV. Type III PTFE powder is allowed for Type 12 and Type 13 materials. The blending of fillers with the virgin PTFE for each type shall be as shown in Table 1.