

AEROSPACE MATERIAL SPECIFICATION



AMS3645

REV. D

Issued 1967-04
Revised 2001-01
Reaffirmed 2003-03
Stabilized 2012-01

Superseding AMS3645C

Polychlorotrifluoroethylene (PCTFE), Compression Molded
Heavy Sections, Unplasticized

RATIONALE

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

STABILIZED NOTICE

This document has been declared "Stabilized" by SAE AMS P, Polymeric Materials Committee, and will no longer be subjected to periodic reviews for currency. Users are responsible for verifying references and continued suitability of technical requirements. Newer technology may exist.

SAE Technical Standards Board Rules provide that: "This report is published by SAE to advance the state of technical and engineering sciences. The use of this report is entirely voluntary, and its applicability and suitability for any particular use, including any patent infringement arising therefrom, is the sole responsibility of the user."

SAE reviews each technical report at least every five years at which time it may be reaffirmed, revised, or cancelled. SAE invites your written comments and suggestions.

Copyright © 2012 SAE International

All rights reserved. No part of this publication may be reproduced, stored in a retrieval system or transmitted, in any form or by any means, electronic, mechanical, photocopying, recording, or otherwise, without the prior written permission of SAE.

TO PLACE A DOCUMENT ORDER: Tel: 877-606-7323 (inside USA and Canada)
Tel: +1 724-776-4970 (outside USA)
Fax: 724-776-0790
Email: CustomerService@sae.org
<http://www.sae.org>

SAE WEB ADDRESS:

**SAE values your input. To provide feedback
on this Technical Report, please visit
<http://www.sae.org/technical/standards/AMS3645D>**

1. SCOPE:

1.1 Form:

This specification covers a 100% homopolymer of polychlorotrifluoroethylene (PCTFE) in the form of sheet 0.250 inch (6.35 mm) and over in thickness, rod, heavy wall tubing, and large molded and machined parts.

1.2 Application:

Primarily for parts requiring chemical inertness and toughness up to 200 °C (392 °F) or high-frequency electrical insulating properties up to 165 °C (329 °F). These products may be used at cryogenic temperatures.

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 following publications form a part of this specification to the extent specified herein. The applicable issue of referenced publications shall be the issue in effect on the date of the purchase order.

2.1 ASTM Publications:

Available from ASTM, 100 Barr Harbor Drive, West Conshohocken, PA 19428-2959 or www.astm.org.

ASTM D 149	Dielectric Breakdown Voltage and Dielectric Strength of Solid Electrical Insulating Materials at Commercial Power Frequencies
ASTM D 618	Conditioning Plastics and Electrical Insulating Materials for Testing
ASTM D 638	Tensile Properties of Plastics
ASTM D 638M	Tensile Properties of Plastics (Metric)
ASTM D 792	Specific Gravity (Relative Density) and Density of Plastics by Displacement
ASTM D 1430	Polychlorotrifluoroethylene (PCTFE) Plastics
ASTM D 1708	Tensile Properties of Plastics by Use of Microtensile Specimens

2.2 U.S. Government Publications:

Available from DODSSP, Subscription Services Desk, Building 4D, 700 Robbins Avenue, Philadelphia, PA 19111-5094.

2.2.1 Military Standards:

MIL-STD-794 Parts and Equipment, Procedures for Packaging and Packing of

3. TECHNICAL REQUIREMENTS:

3.1 Material:

Shall be a virgin, unplasticized, 100% homopolymer of polychlorotrifluoroethylene (PCTFE).

3.2 Condition:

Sheet, rod, tubing, and molded parts shall be annealed. Rods and tubing shall be machined on the outside diameter. Machined parts shall be annealed when so ordered.

3.3 Color:

May range from natural translucent white to gray; localized discoloration resulting from processing is acceptable.

3.4 Properties:

The product shall conform to the following requirements; tests shall be performed on the product supplied and in accordance with specified test methods, insofar as practicable:

3.4.1 Tensile Strength at 23 °C ± 1 (73 °F ± 21), minimum average	5000 psi (34.5 MPa)	4.5.1
--	------------------------	-------