

**AEROSPACE
MATERIAL
SPECIFICATION**



AMS3636

REV. H

Issued 1965-02
Revised 1991-01
Stabilized 2012-01
Superseding AMS3636G

Tubing, Plastic, Electrical Insulation
Irradiated Polyolefin, Pigmented, Flexible, Heat-Shrinkable
2 to 1 Shrink Ratio

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/AMS3636H>**

1. SCOPE:

1.1 Form: This specification covers an irradiated, thermally-stabilized, flame-resistant, modified polyolefin plastic in the form of flexible, thin-wall, heat-shrinkable tubing.

1.2 Application: Primarily as a flexible, electrical insulation tubing whose diameter can be reduced to a predetermined size by heating to 120°C(248°F) or higher. This tubing is stable under the following conditions:

-55° to +135°C (-67° to +275°F)	Continuous
-55° to +150°C (-67° to +302°F)	2000 hours
-55° to +175°C (-67° to +347°F)	336 hours
-55° to +200°C (-67° to +392°F)	48 hours
-55° to +250°C (-67° to +482°F)	8 hours
-55° to +300°C (-67° to +572°F)	2 hours

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, 1916 Race Street, Philadelphia, PA 19103-1187.

- ASTM D 471 - Rubber Property - Effect of Liquids
- ASTM D 2671 - Testing Heat-Shrinkable Tubing for Electrical Use
- ASTM G 21 - Determining Resistance of Synthetic Polymeric Materials to Fungi

2.2. U.S. Government Publications : Available from Standardization Documents Order Desk, Building 4D, 700 Robbins Avenue, Philadelphia, PA 19111-5094.

2.2.1 Military Specifications:

- MIL-H-5606 - Hydraulic Fluid, Petroleum Base, Aircraft, Missile, and Ordnance
- MIL-T-5624 - Turbine Fuel, Aviation, Grades JP-4 and JP-5

2.2.2 Military Standards:

- MIL-STD-104 - Limit for Electrical Insulation Color
- MIL-STD-794 - Parts and Equipment, Procedures for Packaging and Packing of

3. TECHNICAL REQUIREMENTS:

3.1 Material: Shall be an irradiated, thermally-stabilized, flame-resistant, modified polyolefin.

3.2 Color: Shall be as ordered. Colors shall be in accordance with MIL-STD-104, Class I.

3.3 Properties: Tubing shall conform to the following requirements; reported values shall be the average of all specimens tested for each requirement. Except as otherwise specified, herein, tests shall be performed in accordance with ASTM D 2671, insofar as practicable.

3.3.1 Recovered Tubing: The following requirements apply to tubing after being shrunk by heating to $200^{\circ}\text{C} \pm 5$ ($392^{\circ}\text{F} \pm 9$) in a convection-current air oven with an air velocity of 100- 200 feet per minute (0.5- 1.0 m/second) past the tubing, holding at heat for not less than 3 minutes, removing from the oven, and conditioning for not less than 4 hours at $23^{\circ}\text{C} \pm 2$ ($73^{\circ}\text{F} \pm 4$) and 45 - 55% relative humidity,

- | | | | |
|---------|-------------------------------|-------------------|-------|
| 3.3.1.1 | Tensile Strength, minimum | 1500 psi | |
| | Jaw separation rate 20 inches | (10.3 MPa) | |
| | per minute (8.5 mm/s) | | |
| 3.3.1.2 | Elongation, minimum | 200% | |
| 3.3.1.3 | Dielectric Strength, minimum | 500 volts per mil | 4.5.1 |
| | (Short Time Test) | (19,685 V/mm) | |
| 3.3.1.4 | Volume Resistivity, minimum | 10^{14} ohm-cm | |