

**AEROSPACE
MATERIAL
SPECIFICATION**

SAE AMS3599

REV. B

Issued 1982-04
Revised 1991-01
Reaffirmed 2004-06
Stabilized 2011-08

Superseding AMS3599A

Plastic Sheet, Copper Faced
Glass Fabric Reinforced Epoxy Resin, Flammability Controlled

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 © 2011 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
SAE WEB ADDRESS: <http://www.sae.org>

**SAE values your input. To provide feedback
on this Technical Report, please visit
<http://www.sae.org/technical/standards/AMS3599B>**

1. SCOPE:

- 1.1 Form: This specification covers epoxy-resin-impregnated glass fabric laminates in the form of sheet clad on one or both sides with electrolytically-deposited copper foil.
- 1.2 Application: Primarily for use in etched, printed circuits used in electrical and electronic equipment where low moisture absorption and superior bond strength are required.
- 1.3 Classification: This specification covers two types of copper-clad epoxy glass laminates, as follows; the type supplied shall be as specified on the drawing or purchase order:

Type I - Copper clad on one face
Type II - Copper clad on both faces

- 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 insure 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 other 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 149 - Dielectric Breakdown Voltage and Dielectric Strength of Solid Electrical Insulating Materials at Commercial Power Frequencies
 - ASTM D 150 - A-C Loss Characteristics and Permittivity (Dielectric Constant) of Solid Electrical Insulating Materials
 - ASTM D 229 - Testing Rigid Sheet and Plate Materials Used for Electrical Insulation
 - ASTM D 495 - High-Voltage, Low-Current, Dry Arc Resistance of Solid Electrical Insulation
 - ASTM D 568 - Rate of Burning and/or Extent and Time of Burning of Flexible Plastics in a Vertical Position
 - ASTM D 570 - Water Absorption of Plastics
 - ASTM D 618 - Conditioning Plastics and Electrical Insulating Materials for Testing
 - ASTM D 709 - Laminated Thermosetting Materials
 - ASTM D 790 - Flexural Properties of Unreinforced and Reinforced Plastics and Electrical Insulating Materials
 - ASTM D 790M - Flexural Properties of Unreinforced and Reinforced Plastics and Electrical Insulating Materials (Metric)
 - ASTM D 1825 - Etching and Cleaning Copper-Clad Electrical Insulating Materials and Thermosetting Laminates for Electrical Testing
 - ASTM D 3636 - Sampling and Judging Quality of Solid Electrical Insulating Materials
 - 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-C-81302 - Cleaning Compound, Solvent, Trichlorotrifluoroethane
- 2.2.2 Military Standards:
- MIL-STD-794 - Parts and Equipment, Procedures for Packaging and Packing of
- 2.3 The Institute for Interconnecting and Packaging Electronic Circuits (IPC) Publication: Available from IPC, 7380 North Lincoln Ave., Lincolnwood, IL 60646.
- IPC-CF-150 - Copper Foil for Printed Wiring Applications
 - IPC-S-804 - Solderability Test Methods for Printed Wiring Boards
- 2.4 Other Publications: Available from Underwriters' Laboratories, Inc., 333 Pfingsten Road, Northbrook, IL 60602.
- UL94 - Flammability of Plastic Materials for Parts in Devices and Appliances