

AERONAUTICAL MATERIAL SPECIFICATIONS

AMS 3738

SOCIETY OF AUTOMOTIVE ENGINEERS, Inc. 485 Lexington Ave., New York 17, N.Y.

Issued 1-15-58
Revised

POTTING COMPOUND, EPOXY, FILLED
15 - 20 CTE, 180 HDT

1. **ACKNOWLEDGMENT:** A vendor shall mention this specification number in all quotations and when acknowledging purchase orders.
2. **TYPE:** Highly filled epoxy resin formulation consisting of two components, a filled epoxy resin and a hardener.
3. **APPLICATION:** Primarily for embedment and encasement of electronic and electrical component assemblies where low thermal expansion is required and maximum adhesion to most metals and thermosetting plastics is needed.
4. **TECHNICAL REQUIREMENTS:**
 - 4.1 **General:**
 - 4.1.1 **Curing:** When mixed and cured in accordance with manufacturer's recommendations formulation shall polymerize to a uniform, rigid material. Material shall attain excellent adhesion to most metals and thermosetting plastics when surfaces to be bonded have been prepared in accordance with manufacturer's instructions.
 - 4.1.2 **Pot Life:** Material in 100 g batches shall have a useful pot life of not less than 1/2 hr when maintained at 60 - 170 F.
 - 4.1.3 **Corrosion:** The product shall not have a corrosive effect on other materials when exposed to conditions normally encountered in service. Discoloration of metal shall not be considered objectionable.
 - 4.2 **Properties:** The product, when cured to obtain optimum properties, shall conform to the following requirements. Tests shall be performed on specimens cast, after mixing as recommended by the manufacturer, in suitable bar and slab molds, and, insofar as practicable, in accordance with listed ASTM methods.

4.2.1 Flexural Strength, psi, min	8,000	ASTM D790-49T
4.2.2 Impact Strength, Izod, ft-lb per in. of notch, min	0.18	ASTM D256-56, Method C
4.2.3 Heat Distortion Temperature (264 psi fiber stress), deg Fahr, min	180	ASTM D648-56
4.2.4 Insulation Resistance, megohms, min		ASTM D257-54T
at 75 F	1.0×10^5	
at 200 F	0.5×10^5	
4.2.5 Dielectric Strength, v per mil, min	300	ASTM D149-55T
4.2.6 Coefficient of Thermal Expansion from 75 to 165 F, 10^{-6} in. per in. per deg Fahr	15 - 20	ASTM D696-44

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5. QUALITY: The product shall be uniform in quality and condition, clean, sound, and free from foreign materials and from imperfections detrimental to fabrication, appearance, or performance of parts.
6. REPORTS: Unless otherwise specified, the vendor of the product shall furnish with each shipment three copies of a report stating that the product meets the requirements of this specification. This report shall include the purchase order number, material specification number, form or part number, and quantity.
7. PACKAGING: Material shall be supplied in kit form as a filled resin plus a separate container of hardening agent. Each can or container shall bear a label giving this specification number and title, the manufacturer's name, formula number, batch number, date of manufacture, net quantity, and directions for mixing.
8. APPROVAL:
 - 8.1 To assure adequate performance characteristics, compounds shall be approved by purchaser before material for production use is supplied, unless such approval be waived. Results of tests on production material shall be essentially equivalent to those on the approved sample.
 - 8.2 Vendor shall use the same compound and manufacturing processes for production material as for approved sample material. If necessary to make any change, vendor shall obtain written permission from purchaser prior to incorporating such change.
9. REJECTIONS: Material not conforming to this specification or to authorized modifications will be subject to rejection.