

POTTING COMPOUND, EPOXY  
Bisphenol A-Type  
Unfilled, Room Temperature Cure, Semiflexible

1. SCOPE:

- 1.1 Form: This specification covers an unfilled, room-temperature-polymerizing epoxy resin formulation with a polyamide hardener, supplied as a two-component system.
- 1.2 Application: Primarily for use as a casting or sealing material where high thermal expansion can be tolerated and where flammability resistance is not required.

2. APPLICABLE DOCUMENTS: See AMS 3731.

3. TECHNICAL REQUIREMENTS:

- 3.1 Basic Specification: The complete requirements for procuring the product described herein shall consist of this document and the latest issue of the basic specification, AMS 3731.
- 3.2 Material: Shall be an epoxy-based polymer with a separate polyamide curing agent.
- 3.3 Properties: The compound shall conform to the following requirements:
- 3.3.1 Mixed Uncured Compound: The compound, mixed in accordance with manufacturer's instructions, shall exhibit the following properties:
- 3.3.1.1 Viscosity: Shall be not greater than 10,000 centipoise (10.0 Pa·s) at 23°C (73°F), determined within 5 min. after mixing, using a Brookfield Model LVF viscometer and No. 3 spindle at 6 revolutions per minute.

**REAFFIRMED** 10/91

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- 3.3.1.2 Pot Life: Usable life of the compound, defined as the time to attain double the initial viscosity determined in 3.3.1.1, shall be not less than 60 min. at 23°C (73°F).
- 3.3.1.3 Curing Time: The time required to develop the cured product properties specified in 3.3.2 shall be not more than 5 days at 23°C (73°F) or not more than 2 hr at 95°C (200°F).
- 3.3.1.4 Demold Time: The time required before the part can be removed from the mold and retain its integrity shall be not more than 24 hr at 23°C (73°F).
- 3.3.2 Cured Product: The compound, mixed and cured in accordance with manufacturer's instructions, shall exhibit the following properties, determined in accordance with test methods listed in AMS 3731:
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| 3.3.2.1 Flexural Strength, min                                | 8000 psi (55 MPa)  |
| 3.3.2.2 Flexural Modulus, max                                 | 2.5 x 10 <sup>5</sup> psi (1730 MPa)   |
| 3.3.2.3 Izod Impact Strength, per unit of notch, min          | 0.25 ft-lb per in. (13.3 J/m)  |
| 3.3.2.4 Compressive Strength, min                             | 8000 psi (55 MPa)  |
| 3.3.2.5 Insulation Resistance                                 |  |
| 3.3.2.5.1 At 23°C (73°F), min                                 | 1x10 <sup>6</sup> megohms  |
| 3.3.2.4.2 After hydrolytic stability conditioning, min.       | 1x10 <sup>4</sup> megohms  |
| 3.3.2.6 Dielectric Constant at 1 KHz, max                     | 4.5  |
| 3.3.2.7 Dissipation Factor at 1 KHz, max                      | 0.04   |
| 3.3.2.8 Heat Deflection Temperature at 264 psi (1.8 MPa), min | 49°C (120°F)   |
| 3.3.2.9 Coefficient of Linear Thermal Expansion, max          |  |
| 3.3.2.9.1 From -54°C to +23°C (-65°F to +73°F)                | 70x10 <sup>-6</sup> mm/mm per deg C<br>(40x10 <sup>-6</sup> in./in. per deg F) |
| 3.3.2.9.2 From 23°C to 74°C (73°F to 165°F)                   | 90x10 <sup>-6</sup> mm/mm per deg C<br>(50x10 <sup>-6</sup> in./in. per deg F) |
| 3.3.2.10 Water Absorption after 24 hr Immersion, max          | 0.4%   |