

POTTING COMPOUND, EPOXY
Bisphenol A-Type
Filled, Room Temperature Cure, Low Shrinkage

1. SCOPE:

- 1.1 Form: This specification covers a filled, room-temperature-polymerizing epoxy resin formulation, supplied as a two-component system.
- 1.2 Application: Primarily for use as a potting or sealing material where low shrinkage is desired.

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 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.
- 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 30 min. at 23°C (73°F).

REAFFIRMED

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- 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 | 9600 psi (52.5 MPa) |
| 3.3.2.2 Izod Impact Strength, per unit of notch, min | 0.27 ft-lb per in. (14.5 J/m) |
| 3.3.2.3 Compressive Strength, min | 14,000 psi (97 MPa) |
| 3.3.2.4 Insulation Resistance | |
| 3.3.2.4.1 At 23°C (73°F), min | 1x10 ⁶ megohms |
| 3.3.2.4.2 At 120°C (250°F), min | 1x10 ³ megohms |
| 3.3.2.4.3 After hydrolytic stability conditioning, min | 1x10 ⁴ megohms |
| 3.3.2.5 Dielectric Constant at 1 KHz, max | 5.5 |
| 3.3.2.6 Dissipation Factor at 1 KHz, max | 0.04 |
| 3.3.2.7 Heat Deflection Temperature at 264 psi (1.8 MPa), min | 77°C (170°F) |
| 3.3.2.8 Coefficient of Linear Thermal Expansion, max | |
| 3.3.2.8.1 From -54°C to +23°C (-65°F to +73°F) | 35x10 ⁻⁶ mm/mm per deg C
(20x10 ⁻⁶ in./in. per deg F) |
| 3.3.2.8.2 From 23°C to 75°C (73°F to 165°F) | 50x10 ⁻⁶ mm/mm per deg C
(27x10 ⁻⁶ in./in. per deg F) |
| 3.3.2.9 Water Absorption after 24 hr immersion, max | 0.1% |
| 3.3.2.10 Specific Gravity, max | 1.8 |