

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: Shall be as shown in 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.

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).

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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:

3.3.2.1	Flexural Strength, min	8,000 psi (55 MPa)
3.3.2.2	Flexural Modulus, max	$2.5 \times 10^5$ 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	8,000 psi (60 MPa)
3.3.2.5	Insulation Resistance	
3.3.2.5.1	At 23°C (73°F), min	$1 \times 10^6$ megohms
3.3.2.4.2	After hydrolytic stability conditioning, min	$1 \times 10^4$ 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)	$70 \times 10^{-6}$ (mm/mm)/deg C $(40 \times 10^{-6}$ in. per in. per deg F)
3.3.2.9.2	From 23°C to 74°C (73°F to 165°F)	$90 \times 10^{-6}$ (mm/mm)/deg C $(50 \times 10^{-6}$ in. per in. per deg F)
3.3.2.10	Water Absorption after 24 hr Immersion, max	0.4%