

POTTING COMPOUND, EPOXY  
Bisphenol A-Type  
Syntactic Foam, Heat Cure

1. SCOPE:

1.1 Form: This specification covers a glass or silica microsphere-filled epoxy resin formulation, supplied as a two-component system, requiring an oven cure for attainment of maximum properties.

1.2 Application: Primarily for use as a potting or sealing material where low density is desired.

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 curing agent, containing AMS 3571 hollow glass microspheres.

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 8000 centipoise (8.0 Pa s) at 75°C (165°F), determined within 5 min. after mixing, using a Brookfield Model LVF viscometer and No. 3 spindle at 6 revolutions per minute.

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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 45 min. at 75°C (165°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 16 hr at 75°C (165°F) or not more than 2 hr at 23°C (73°F) plus 3 hr at 95°C (200°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 3,200 psi (22 MPa)
- 3.3.2.2 Izod Impact Strength, per unit of notch, min 0.12 ft-lb per in. (6.4 J/m)
- 3.3.2.3 Compressive Strength, min 12,000 psi (83 MPa)
- 3.3.2.4 Insulation Resistance
- 3.3.2.4.1 At 23°C (73°F), min  $1 \times 10^6$  megohms
- 3.3.2.4.2 At 120°C (250°F), min  $1 \times 10^2$  megohms
- 3.3.2.4.3 After hydrolytic stability conditioning, min  $1 \times 10^4$  megohms
- 3.3.2.5 Dielectric Constant at 1 KHz, max 5.0
- 3.3.2.6 Dissipation Factor at 1 KHz, max 0.03
- 3.3.2.7 Heat Deflection Temperature at 264 psi (1.8 MPa), min 70°C (160°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)  $35 \times 10^{-6}$  (mm/mm)/deg C  
( $20 \times 10^{-6}$  in. per in. per deg F)
- 3.3.2.8.2 From 23°C to 75°C (73°F to 165°F)  $50 \times 10^{-6}$  (mm/mm)/deg C  
( $27 \times 10^{-6}$  in. per in. per deg F)
- 3.3.2.9 Water Absorption after 24 hr Immersion, max 0.2%