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400 COMMONWEALTH DRIVE. WARRENDALE. PA. 15096

AEROSPACE MATERIAL SPECIFICATION

AMS 3731/3
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Revised

POTTING COMPOUND, EPOXY
Bisphenol A-Type
Filled, Heat Cure, Machinable

1. SCOPE:

1.1 Form: This specification covers an epoxy resin formulation with fillers such as calcium carbonate, supplied as a two-component system, requiring an oven cure for attainment of maximum properties.

1.2 Application: Primarily for cast shapes, encapsulation, or use as a sealing material where machinability is desirable.

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 filler and 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 1000 centipoise (1.0 Pa s) at 65°C (150°F), determined within 5 min. after mixing, using a Brookfield Model LVF viscometer and No. 2 spindle at 12 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 65°C (150°F).

3.3.1.3 Curing Time: The time required to develop the cured product properties specified in 3.2 shall be not more than 16 hr at 65°C (150°F) or not more than 8 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	8,000 psi (55 MPa)
3.3.2.2	Izod Impact Strength, per unit of notch, min	0.20 ft-lb per in. (10.7 J/m)
3.3.2.3	Compressive Strength, min	21,000 psi (145 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 121°C (250°F), min	$1x10^5$ 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	88°C (190°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)/deg C ($20x10^{-6}$ in. per in. per deg F)
3.3.2.8.2	From 23°C to 74°C (73°F to 165°F)	$45x10^{-6}$ (mm/mm)/deg C ($25x10^{-6}$ in. per 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
3.3.2.11	Flammability (extent of burning), max	1 in. (25 mm)