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400 COMMONWEALTH DRIVE WARRENDALE, PA 15096

AEROSPACE MATERIAL SPECIFICATION

AMS 3731/9

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Revised

POTTING COMPOUND, EPOXY
Flexible, Thermal Shock Resistant, Heat Cure

1. SCOPE:

1.1 Form: This specification covers a flexibilized 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 casting or sealing material where thermal shock resistance is desired 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 a mixed polymer composed of a bisphenol A epoxy and a polyether prepolymer polyurethane based on a toluene di-isocyanate 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 1000 centipoise (1.0 Pa s) at 95°C (200°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 95°C (200°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 95°C (200°F) or not more than 6 hr at 120°C (250°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	Insulation Resistance	
3.3.2.1.2	At 23°C (73°F), min	$1x10^6$ megohms
3.3.2.1.3	At 120°C (250°F), min	$1x10^3$ megohms
3.3.2.1.4	After hydrolytic stability conditioning, min	$1x10^4$ megohms
3.3.2.2	Dielectric Constant at 1 KHz, max	6.0
3.3.2.3	Dissipation Factor at 1 KHz, max	0.07
3.3.2.4	Water Absorption after 24 hr immersion, max	0.75%
3.3.2.5	Hardness, Shore A, max	85
3.3.2.6	Specific Gravity, max	1.2
3.3.2.7	Thermal Shock Resistance	No failure in 4 of 5 specimens in ten cycles from +130°C to -55°C (+265° to -65°F)

4. QUALITY ASSURANCE PROVISIONS: See AMS 3731.

5. PREPARATION FOR DELIVERY: See AMS 3731.

6. ACKNOWLEDGMENT: See AMS 3731.