EPOXIES
INNOVATIVE BONDING SOLUTIONS ETC.

TECHNICAL BULLETIN

50-2151 FR
POLYURETHANE THERMALLY CONDUCTIVE POTTING & ENCAPSULATING COMPOUND

DESCRIPTION:

50-2151 FR is a high performance thermally conductive two component urethane system. This easy to use polyurethane is low in viscosity and ideal for potting or encapsulating delicate electronic components. 50-2151 FR exhibits very low shrinkage, stress, and exotherm throughout the cure cycle. This system is also well known for its outstanding thermal shock and excellent dielectric properties.

50-2151 FR is formulated to be flame retardant. It is a good choice when heat transfer and electrical insulation properties are required.

FEATURES:

- Does not contain MOCA or TDI
- Low viscosity
- Very good thermal shock and vibration resistance
- Low stress on components
- Easy to handle
- Low shrinkage

TYPICAL SPECIFICATIONS:

Mix ratio	
By weight (Polyol, Isocyanate)	100:12
By volume (Polyol, Isocyanate)	100:16
Viscosity, 25 °C, cps	
Polyol	30,000
Isocyanate	200
Mixed	10,000
Standard color	Tan
Pot life, @ 25°C 100 grams	70 Minutes
Specific gravity, @ 25°C	
Polyol	1.66
Isocyanate	1.23
Hardness, shore D	
@25ºC	50
@60ºC	50
@100ºC	40
Tensile strength, psi	1,025
% Elongation	30
Linear shrinkage, %	< 1
Thermal Conductivity, W/m- °K	1.15

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TYPICAL SPECIFICATIONS (continued):

Operating temperature range, °C	$^{-}55$ to $^{+}130$
Dielectric strength, V/mil	540
Dielectric constant, 100 Hz	4.0
Dissipation factor, 100 Hz	0.18
Volume resistivity, ohm-cm	6.8×10^{13}
Surface resistivity, ohms	1.8×10^{17}

Note: When cured at room temperature full hardness and final properties are achieved in 7-10 days.

INSTRUCTIONS FOR USE:

1. By weight, thoroughly mix 12 parts Isocyanate to 100 parts Polyol. By volume, thoroughly mix 16 parts Isocyanate to 100 parts Polyol. Two components should be carefully weighed in metal, plastic or glass containers. Avoid using paper cups and wooden stirrers.
2. Mixed material can be degassed at 29 in Hg to ensure bubble free castings. Containers should be large enough to allow frothing.
3. Cure according to one of the following cure schedules:

25°C	24 Hours
45°C	2.5 Hours
65°C	1.5 Hours
85°C	40 Minutes

Note: When cured at room temperature full hardness and final properties are achieved in 7-10 days.

STORAGE & HANDLING & SAFETY:

Store both components at 75-85°F in original containers. If the containers are opened and the contents partially used, the material left in the container should be blanketed with dry nitrogen before sealing. Carefully read Safety Data Sheets before using.

AVAILABILITY:

This product is available in quarts, gallons, five gallon pails and 55 gallon drums.

IMPORTANT:

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