

Key Features

High Thermal Conductivity
Electrically Insulative
Semi-flexible
Superior Thermal Cycling
Hydrolytic Stability
Ideal for Electrical Potting
Injectable
Long Pot Life
Low Glass Transition Temperature
Low Modulus
Meets NASA Outgassing Requirements
Self Leveling
Solvent Resistant

Uncured

Work Life @ 25°C: 4 hours
Viscosity @ 25°C: Paste
Shelf Life @ -40°C: 6 Months
Shelf Life @ -60°C: 9 Months

Cure Options

2 hours @ 96°C
4 hours @ 72°C
2 weeks @ 25°C

Cured Properties

(Based on cure of 2 hours @ 96°C)
Color Blue
Shore A Hardness 95
Shore D Hardness 45
Glass Transition Temp (°C) -40
Density (g/cc) 2.8
Lap Shear 2024T3 Clad (psi) 500
Tensile Strength (psi) 450
Tensile Modulus (psi) 9,500
Compressive Strength (psi) 1,400
Compressive Modulus (psi) 14,500
Elongation (%) 5
Poisson's Ratio 0.38

Electrical Properties

(Based on cure of 2 hours @ 96°C)
Dielectric Constant 16 @ 10 kHz
Dielectric Constant 14 @ 100 kHz
Dielectric Constant 11 @ 1 MHz
Dissipation Factor 0.00 @ 10 kHz
Dissipation Factor 0.07 @ 100 kHz
Dissipation Factor 0.18 @ 1 MHz
Dielectric Strength (volts/mil) 650
Volume Resistivity (ohm-cm) 1.0E 13 @ 500 VDC

Product Description:

Appli-Thane[®] 7300 is a one-component, blue, thermally conductive, precision mixed, degassed, and frozen polyurethane adhesive compound for advanced electronic assembly. It is a self-leveling, injectable compound suitable for electronic bonding and potting, and may also be used for bonding leaded components. It is a long pot life polyurethane which maintains its dispensability for 4 hours, making it suitable for automated dispensing. Appli-Thane[®] 7300 has a thermal conductivity of 2.5 W/mK, and cures to a semi-flexible material with relatively low modulus and a very low Glass Transition Temperature (Tg). The cured material's ability to not crack or harm bonded rigid components during thermal cycling is a major plus. Because of its high filler loading, the CTE of Appli-Thane[®] 7300 is much lower than conventional polyurethane elastomers, while retaining relatively low modulus. Appli-Thane[®] 7300 passes NASA outgassing requirements with either room temperature cure or heat curing. Appli-Thane[®] 7300 provides best in class thermal conductivity for applications requiring aggressive heat dissipation of components.

Thermal Properties

(Based on cure of 2 hours @ 96°C)
CTE below Tg (ppm/°C) 25
CTE above Tg (ppm/°C) 75
Glass Transition Temp (°C) -40
Operating Temp. Range (°C) -100 to 160
Thermal Conductivity (W/mK) 2.5

Outgassing Properties

(Based on cure of 2 hours @ 96°C)
TML (%) 0.19
CVCM (%) 0.03
WVR (%) 0.04

Outgassing Properties

(Based on cure of 2 weeks @ 25°C)
TML (%) 0.12
CVCM (%) 0.01
WVR (%) 0.03

Acoustic Properties

Velocity (m/s) 2,145
Impedance (MRayles) 6.28
Loss (dB/cm-MHz) -16.5
Density (g/cc) 2.8

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