

LOCTITE STYCAST EE 4183 HD 3561

April 2019

PRODUCT DESCRIPTION

LOCTITE STYCAST EE 4183 HD 3561 provides the following product characteristics:

| | |
|-------------------------------------|--|
| Technology | Epoxy |
| Appearance, Resin (Part A) | Tan |
| Appearance, Hardener (Part B) | Tan |
| Appearance (cured) | Tan |
| Components | Two components - requires mixing |
| Product Benefits | <ul style="list-style-type: none"> Improved thermal conductivity Heat resistant Thermal shock resistant |
| Mix Ratio by volume: Part A: Part B | 100 : 24 |
| Mix Ratio by weight: Part A: Part B | 100 : 15 |
| Cure | Heat cure or Room temperature |
| Application | Encapsulation, Potting |

LOCTITE STYCAST EE 4183 HD 3561 is a filled system offering improved thermal conductivity and increased resistance to heat and thermal shock. The filled system is recommended for potting applications where rigid or flexible wire leads protrude directly from the encapsulation and where high impact strength is required. This system eliminates microscopic cracking on flexing of leads. It adheres extremely well to lead materials, such as vinyl or neoprene.

TYPICAL PROPERTIES OF UNCURED MATERIAL

Part A Properties LOCTITE STYCAST EE 4183

| | |
|--|--------|
| Filler Content, % | 50 |
| Density @ 25°C, g/cc | 1.6 |
| Viscosity, Brookfield - RVF, 25 °C, mPa·s (cP): Spindle 6, speed 10 rpm | 80,000 |
| Shelf Life @ 25°C (from date of shipment), days | 180 |

Part B Properties LOCTITE STYCAST HD 3561

| | |
|--|-----------|
| Density @ 25°C, g/cc | 1.01 |
| Viscosity, Brookfield - RVF, 25 °C, mPa·s (cP): Spindle 1, speed 20 rpm | 20 |
| Color, maximum | Gardner 3 |
| Shelf Life @ 25°C (from date of shipment), days | 365 |

Mixed Properties LOCTITE STYCAST EE 4183 HD 3561

| | |
|--|-------|
| Filler Content % | 43.5 |
| Density, g/cc | 1.5 |
| Specific Gravity | 1.5 |
| Viscosity @ 25 °C, mPa·s (cP) | 2,000 |
| Pot Life, 200 gm mass, @ 25 °C, minutes | 80 |
| Peak Exotherm Temperature, 200 gram mass, °C | 115 |

TYPICAL CURING PERFORMANCE AS MIXED

Recommended Cure Schedule

3 hours @ 60°C

Alternate Cure Schedule

24 hours @ 25°C

The above cure profiles are guideline recommendations. Cure conditions (time and temperature) may vary based on customers' experience and their application requirements, as well as customer curing equipment, oven loading and actual oven temperatures.

TYPICAL PROPERTIES OF CURED MATERIAL AS MIXED

Physical Properties

| | |
|--|-----------------------|
| Coefficient of Linear Thermal Expansion, in/in/°C x 10 ⁻⁶ : | |
| @ 30 to 70°C | 53 |
| @ 70 to 90°C | 119 |
| Elongation, % | 2.2 |
| Hardness, Shore D | 83 |
| Heat Deflection Temperature @ 264 psi, °C | 85 |
| Izod Impact Strength, ft-lb/in. of notch | 0.44 |
| Linear Shrinkage, % | 0.5 |
| Moisture Absorption, 24 hrs immersion, % | 0.21 |
| Thermal Conductivity, cal x cm/sec x cm ² x °C | 11 x 10 ⁻⁴ |

Electrical Properties

| | |
|--|----------------------|
| Dielectric Strength, 10 mil thickness, volts/mil | 1,500 |
| Arc Resistance, seconds | 138 |
| Volume Resistivity, ohm-cm : | |
| @ 25°C | 4 × 10 ¹⁴ |
| @ 80°C | 2 × 10 ¹⁰ |
| Dielectric Constant / Dissipation Factor @ 25°C: | |
| 100 Hz | 4.51 / 0.01 |
| 1 kHz | 4.5 / 0.086 |
| 10 kHz | 4.41 / 0.017 |
| 100 kHz | 4.21 / 0.027 |

Dielectric Constant / Dissipation Factor @ 80°C:

| | |
|---------|--------------|
| 100 Hz | 6.92 / 0.021 |
| 1 kHz | 6.1 / 0.007 |
| 10 kHz | 5.58 / 0.046 |
| 100 kHz | 5.27 / 0.03 |

TYPICAL CURED PERFORMANCE AS MIXED

All measurements are taken at 25°C, unless otherwise noted.

Miscellaneous

| | | |
|----------------------------|-------------------|----------|
| Tensile Strength | N/mm ² | 58.6 |
| | (psi) | (8,500) |
| Compressive Strength | N/mm ² | 155 |
| | (psi) | (22,500) |
| Compressive Yield Strength | N/mm ² | 105 |
| | (psi) | (15,200) |
| Flexural Strength | N/mm ² | 107 |
| | (psi) | (15,500) |

GENERAL INFORMATION

For safe handling information on this product, consult the Safety Data Sheet, (SDS).

Not for product specifications

The technical data contained herein are intended as reference only. Please contact your local quality department for assistance and recommendations on specifications for this product.

STORAGE:

Store product in the unopened container in a dry location. Storage information may be indicated on the product container labeling.

Liquid Storage - Liquids should be stored at 25°C or below, in closed containers. If stored below 25°C, the material MUST be allowed to come to room temperature, in the sealed container, to avoid moisture contamination.

Material removed from containers may be contaminated during use. Do not return product to the original container. Henkel Corporation cannot assume responsibility for product which has been contaminated or stored under conditions other than those previously indicated. If additional information is required, please contact your local Technical Service Center or Customer Service Representative.

Conversions

$(^{\circ}\text{C} \times 1.8) + 32 = ^{\circ}\text{F}$
 $\text{kV/mm} \times 25.4 = \text{V/mil}$
 $\text{mm} / 25.4 = \text{inches}$
 $\text{N} \times 0.225 = \text{lb/F}$
 $\text{N/mm} \times 5.71 = \text{lb/in}$
 $\text{psi} \times 145 = \text{N/mm}^2$
 $\text{MPa} = \text{N/mm}^2$
 $\text{N} \cdot \text{m} \times 8.851 = \text{lb} \cdot \text{in}$
 $\text{N} \cdot \text{m} \times 0.738 = \text{lb} \cdot \text{ft}$
 $\text{N} \cdot \text{mm} \times 0.142 = \text{oz} \cdot \text{in}$
 $\text{mPa} \cdot \text{s} = \text{cP}$

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