

# LOCTITE STYCAST EE 4183/ HD 0242

August 2019

## PRODUCT DESCRIPTION

LOCTITE STYCAST EE 4183/ HD 0242 provides the following product characteristics:

|   |   |
|---|---|
| <b>Technology</b>                       | Epoxy   |
| Appearance, Resin (Component A)         | Tan   |
| Appearance, Hardener (Component B)      | Dark amber  |
| Appearance (cured)                      | Tan   |
| Components                              | Two components - requires mixing  |
| Product Benefits                        | <ul style="list-style-type: none"> <li>Improved thermal conductivity</li> <li>High heat distortion</li> </ul> |
| Mix Ratio, (by weight) Resin : Hardener | 100 : 8   |
| Mix Ratio, (by volume) Resin : Hardener | 100 : 12  |
| <b>Cure</b>                             | Heat cure   |
| <b>Application</b>                      | Encapsulation and Potting   |

LOCTITE STYCAST EE 4183/ HD 0242 is a filled system specifically formulated to improve thermal properties. This system is used to encapsulate resistors, coils and similar components that require high heat distortion temperatures.

## TYPICAL PROPERTIES OF UNCURED MATERIAL

### Part A Properties LOCTITE STYCAST EE 4183

|   |        |
|---|--------|
| Viscosity, Brookfield - RVF, 25 °C, cps:        |        |
| Spindle 6, speed 4 rpm                          | 80,000 |
| Density @ 25°C, gm/cc                           | 1.6    |
| Filler Content, %                               | 49     |
| Shelf Life @ 25°C (from date of shipment), days | 180    |
| Flash Point - See SDS                           |        |

### Part B Properties HD 0242

|   |      |
|---|------|
| Viscosity, Brookfield - RVF, 25 °C, cps:        |      |
| Spindle 2, speed 20 rpm                         | 80   |
| Density @ 25°C, gm/cc                           | 1.03 |
| Filler Content, %                               | 0    |
| Shelf Life @ 25°C (from date of shipment), days | 365  |
| Flash Point - See SDS                           |      |

## Mixed Properties

|   |        |
|---|--------|
| Viscosity @ 25 °C, cps:                 |        |
| Spindle 4, speed 2 rpm                  | 25,000 |
| Pot Life, 200 gm mass, @ 25 °C, minutes | 55     |
| Gel Time, 200 gm mass @ 40 °C, minutes  | 25     |
| Gel Time, 10gm mass @ 100 °C, minutes   | 5.5    |
| Gel Time, 10 gm mass @ 121 °C, minutes  | 3.0    |
| Flash Point - See SDS                   |        |

## TYPICAL CURING PERFORMANCE AS MIXED

### Recommended Cure Schedule

1 hour @ 40°C plus 2 hours @ 150°C

### Alternate Cure Schedule

Gel @ 25 °C plus 2 hours @ 150°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 <sup>6</sup> :       |      |
| @ 25 to 90°C  | 51   |
| Thermal Conductivity, cal x cm/sec x cm <sup>2</sup> x °C, 10 <sup>-4</sup> | 13.5 |
| Glass Transition Temperature (Tg), °C                                       | 118  |
| Hardness, Shore D   | 93   |
| Linear Shrinkage, %   | 0.85 |
| Moisture Absorption, 24 hrs immersion, %                                    | 0.07 |
| Guide to Operating Class, IEEE °C   | 155  |

### Electrical Properties:

|                                |                      |
|--------------------------------|----------------------|
| Dielectric Strength, volts/mil | 1,400                |
| Arc Resistance, seconds        | 183                  |
| Volume Resistivity, ohm-cm:    |                      |
| @ 25 °C                        | 1.5×10 <sup>16</sup> |
| @ 85 °C                        | 1×10 <sup>14</sup>   |
| @ 130°C                        | 1×10 <sup>13</sup>   |
| Surface Resistivity, ohms:     |                      |
| @ 25 °C                        | 8.8×10 <sup>15</sup> |
| @ 85 °C                        | 8×10 <sup>14</sup>   |
| @ 130°C                        | 2×10 <sup>13</sup>   |

**Dielectric Constant / Dissipation Factor @ 25°C:**

|           |           |
|-----------|-----------|
| @ 100 Hz  | 4.2/0.008 |
| @ 1 kHz   | 4.2/0.012 |
| @ 10 kHz  | 4.1/0.02  |
| @ 100 kHz | 3.9/0.021 |

**Dielectric Constant / Dissipation Factor @ 85°C:**

|           |           |
|-----------|-----------|
| @ 100 Hz  | 4.5/0.007 |
| @ 1 kHz   | 4.4/0.006 |
| @ 10 kHz  | 4.4/0.007 |
| @ 100 kHz | 4.3/0.014 |

**Dielectric Constant / Dissipation Factor @ 130°C:**

|           |           |
|-----------|-----------|
| @ 100 Hz  | 4.6/0.023 |
| @ 1 kHz   | 4.5/0.01  |
| @ 10 kHz  | 4.4/0.006 |
| @ 100 kHz | 4.4/0.006 |

**TYPICAL CURED PERFORMANCE AS MIXED**

|                      |                   |          |
|----------------------|-------------------|----------|
| Tensile Strength     | N/mm <sup>2</sup> | 55.2     |
|                      | (psi)             | (8,000)  |
| Compressive Strength | N/mm <sup>2</sup> | 155      |
|                      | (psi)             | (22,500) |
| Flexural Strength    | N/mm <sup>2</sup> | 115      |
|                      | (psi)             | (16,640) |

**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**

(°C x 1.8) + 32 = °F  
 kV/mm x 25.4 = V/mil  
 mm / 25.4 = inches  
 N x 0.225 = lb/F  
 N/mm x 5.71 = lb/in  
 psi x 145 = N/mm<sup>2</sup>  
 MPa = N/mm<sup>2</sup>  
 N·m x 8.851 = lb·in  
 N·m x 0.738 = lb·ft  
 N·mm x 0.142 = oz·in  
 mPa·s = cP

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The information provided in this Technical Data Sheet (TDS) including the recommendations for use and application of the product are based on our knowledge and experience of the product as at the date of this TDS. The product can have a variety of different applications as well as differing application and working conditions in your environment that are beyond our control. Henkel is, therefore, not liable for the suitability of our product for the production processes and conditions in respect of which you use them, as well as the intended applications and results. We strongly recommend that you carry out your own prior trials to confirm such suitability of our product.

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