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Technical Data Sheet

LOCTITE STYCAST EE 4186 HD 3561

April 2019

PRODUCT DESCRIPTION

LOCTITE STYCAST EE 4186 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	• Low CTE • Low shrinkage
Mix Ratio by volume: Part A: Part B	100 : 18
Mix Ratio by weight: Part A: Part B	100 : 10
Cure	Heat cure or Room temperature
Application	Encapsulation, Potting

LOCTITE STYCAST EE 4186 HD 3561 is a filled system offering lower coefficient of linear thermal expansion (CTE) and shrinkage. 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 4186

Filler Content, %	65
Density @ 25ºC, g/cc	1.8
Viscosity, Brookfield - RVF, 25 °C, mPa·s (cP):	
Spindle 6, speed 10 rpm	150,000
Shelf Life @ 25°C (from date of shipment), days	365

Part B Properties LOCTITE STYCAST HD 3561

Density @ 25ºC, 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 4186 HD 3561

Filler Content %	59
Density, g/cc	2.1
Viscosity @ 25 °C, mPa·s (cP)	4,000
Pot Life, 200 gm mass , @ 25 °C, minutes	80
Peak Exotherm Temperature, 200 gram mass, ºC	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/ºC x 10^{-6}:	
@ 30 to 70ºC	50
@ 70 to 90ºC	110
Elongation, %	1.9
Hardness, Shore D	95
Heat Deflection Temperature @ 264 psi, ºC	85
Izod Impact Strength, ft-lb/in. of notch	0.24
Linear Shrinkage, %	0.31
Moisture Absorption, 24 hrs immersion, %	0.113
Thermal Conductivity, cal x cm/sec x cm^2 x ºC	18 x 10^{-4}

Electrical Properties

Dielectric Strength, volts/mil:	
@ 10 mil thickness	1,400
@ 20 mil thickness	1,585
Arc Resistance, seconds	190
Volume Resistivity, ohm-cm :	
@ 25°C	2×10^{16}
@ 80°C	4.6×10^{12}
Dielectric Constant / Dissipation Factor @ 25ºC:	
100 Hz	4.8 / 0.11
1 kHz	4.8 / 0.008
10 kHz	4.52 / 0.013
100 kHz	4.6 / 0.022

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Dielectric Constant / Dissipation Factor @ 80ºC:

100 Hz	6.3 / 0.078
1 kHz	5.8 / 0.052
10 kHz	5.45 / 0.036
100 kHz	5.21 / 0.025

TYPICAL CURED PERFORMANCE AS MIXED

All measurements are taken at 25ºC, unless otherwise noted.

Miscellaneous

Tensile Strength	N/mm²	68.9
	(psi)	(10,000)
Compressive Strength	N/mm²	145
	(psi)	(21,000)
Flexural Strength	N/mm²	96.5
	(psi)	(14,000)

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/mm²
MPa = N/mm²
N·m x 8.851 = lb·in
N·m x 0.738 = lb·ft
N·mm x 0.142 = oz·in
mPa·s = cP

Disclaimer

Note:
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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