

LOCTITE STYCAST ES 1001

November 2016

PRODUCT DESCRIPTION

LOCTITE STYCAST ES 1001 provides the following product characteristics:

Technology	Epoxy
Appearance - Part A	Black
Appearance - Part B	Tan
Appearance (cured)	Black
Components	Two components - requires mixing
Mix Ratio by volume: Part A: Part B	1 : 1
Mix Ratio by weight: Part A: Part B	100 : 87
Cure	Room temperature cure
Application	Potting and Encapsulating

LOCTITE STYCAST ES 1001 is a two-component casting system with excellent handling properties. This low cost, flexible system is filled with a non-abrasive filler for machine metering/dispensing. This material has good thermal shock resistance and low exotherm, making it suitable for encapsulation of various components and modules. LOCTITE STYCAST ES 1001 is a low viscosity material, making it suitable for impregnating applications with small tolerances.

TYPICAL PROPERTIES OF UNCURED MATERIAL

Part A Properties

Density, @ 25 °C, g/cm ³	1.82
Viscosity, Brookfield - RVF, cP: Spindle 6, speed 2 rpm	14,000
Filler Content, %	50

Part B Properties

Density, @ 25 °C, g/cm ³	1.64
Filler Content, %	55
Viscosity, Brookfield - RVF, cP: Spindle 3, speed 10 rpm	3,500

Mixed Properties

Density, @ 25 °C, g/cm ³	1.83
Filler Content, %	52
Peak Exotherm Temperature, °C: 200 g mass	42
Pot Life @ 25 °C, minutes: 200 g mass	60
500 g mass	58
1,000 g mass	47
Viscosity, Brookfield - RVF, cP: Spindle 4, speed 2 rpm	10,000

TYPICAL CURING PERFORMANCE

Recommended Curing Conditions

- 24 hours @ 25 °C (Recommended cure)
- 3 hours @ 60 °C (Alternate cure)

The above cure profile is a guideline recommendation. 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

Physical Properties :

Glass Transition Temperature, °C	36
Coefficient of Thermal Expansion, ppm/°C:	
Pre Tg (Alpha 1)	74
Post Tg (Alpha 2)	180
Coefficient of Thermal Conductivity, W/(m-K)	0.293
Linear Shrinkage, %	0.007
Shore Hardness, Durometer D	75
24 Hour Water Moisture Absorption, %	1.1
Izod Impact Strength, N/mm of notch	0.05
Tensile Elongation, %	45
Tensile Strength, psi	1,400
Compressive Strength, psi	14,000

Electrical Properties:

Dielectric Strength, 10 mil thickness, volts/mil	1,100
Volume Resistivity, ohm-cm	2×10 ¹³
Volume Resistivity, ohm-cm @ 105°C	4×10 ⁹
Surface Resistivity, ohms @ 25°C	1×10 ¹⁴
Surface Resistivity, ohms @ 105°C	2×10 ¹¹
Dielectric Constant / Dissipation Factor @ 25°C:	
100 Hz	5.7 / 0.12
1 kHz	4.9 / 0.007
10 kHz	4.4 / 0.063
Dielectric Constant / Dissipation Factor @ 105°C:	
100 Hz	20.0 / 4.36
1 kHz	11.8 / 0.974
10 kHz	8.6 / 0.104

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.

Note: Before using this product please purge approximately 30 ml. of material prior to application. Discard purged material in accordance with the Material Safety Data Sheet. A video instruction is available upon request.

DIRECTIONS FOR USE

LOCTITE STYCAST ES 1001 will settle upon storage, especially at temperatures exceeding 28°C. Storage at the lower end of the recommended range will help to minimize filler settling. LOCTITE STYCAST ES 1001 should be warmed to room temperature prior to use.

STORAGE:

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

Optimal Storage: 8°C to 28°C. Storage below 8°C or greater than 28°C can adversely affect product properties.

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

$(^{\circ}\text{C} \times 1.8) + 32 = ^{\circ}\text{F}$

$\text{kV/mm} \times 25.4 = \text{V/mil}$

$\text{mm} / 25.4 = \text{inches}$

$\text{N} \times 0.225 = \text{lb}$

$\text{N/mm} \times 5.71 = \text{lb/in}$

$\text{psi} \times 145 = \text{N/mm}^2$

$\text{MPa} = \text{N/mm}^2$

$\text{N}\cdot\text{m} \times 8.851 = \text{lb}\cdot\text{in}$

$\text{N}\cdot\text{m} \times 0.738 = \text{lb}\cdot\text{ft}$

$\text{N}\cdot\text{mm} \times 0.142 = \text{oz}\cdot\text{in}$

$\text{mPa}\cdot\text{s} = \text{cP}$

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