

LOCTITE STYCAST ES 6003

April 2016

PRODUCT DESCRIPTION

LOCTITE STYCAST ES 6003 provides the following product characteristics:

Technology	Epoxy
Components	Two component - requires mixing
Appearance (Resin)	Black
Appearance (Hardener)	Clear
Appearance (Mixed)	Black
Product Benefits	- Thermally conductive - Room temperature cure - Medium viscosity - Long gel time
Mix Ratio, by weight - Resin : Hardener	100 : 7
Mix Ratio, by volume - Resin : Hardener	5.7 : 1
Cure	Room temperature or Heat cure
Application	Potting and Encapsulating

LOCTITE STYCAST ES 6003 epoxy encapsulant is developed to meet improved thermal cycling specifications.

TYPICAL PROPERTIES OF UNCURED MATERIAL

Resin Properties

Viscosity, mPa·s (cP):	
@ 25°C	92,500
@ 55°C	31,500
Density, lbs/gal	20.2
Shelf Life (from date of manufacture), days	365
Flash Point - See SDS	

Hardener Properties

Viscosity @ 25 °C, mPa·s (cP)	40
Density, lbs/gal	8.0
Shelf Life (from date of manufacture), days	365
Flash Point - See SDS	

Mixed Properties

Mixed Viscosity @ 25 °C, mPa·s (cP)	7,500
Mixed Density, lbs/gal	18.4
Pot Life @ 25°C, 200 gram mass, hours	1.5

TYPICAL CURING PERFORMANCE

Gel Time @ 25 °C, 100 gram mass, hours	3 to 4
Recommended Cure Schedule	48 hours @ 25°C
Alternate Cure Schedule	4 hours @ 66°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

Physical Properties

Hardness, Shore D	93
Glass Transition Temperature, °C	57
Coefficient of Thermal Expansion :	
Below Tg, -75 to 57 °C, mm/mm/°C	3.2×10^{-5}
Above Tg, 57 to 175 °C, mm/mm/°C	1.1×10^{-4}
Thermal Conductivity, W/(m·K)	1.15
Linear Shrinkage, in/in	0.006
Water Absorption (24 hr immersion), %	0.9

Electrical Properties

Volume Resistivity, ohm-cm	1.4×10^{15}
Arc Resistance, seconds	150
Dielectric Strength, volts/mil	390
Dielectric Constant / Dissipation Factor:	
@ 100 Hz	5.3/0.01
@ 1 KHz	5.2/0.01
@ 10 KHz	5.28/0.01
@ 100 KHz	5.1/0.02

TYPICAL CURED PERFORMANCE AS MIXED

Miscellaneous

Compressive Strength	N/mm ² 106
	(psi) (15,500)
Flexural Strength	N/mm ² 75
	(psi) (10,900)

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

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