

LOCTITE STYCAST ES 6516

February 2022

PRODUCT DESCRIPTION

LOCTITE STYCAST ES 6516 provides the following product characteristics:

Technology	Epoxy
Appearance (Resin)	Black
Appearance (Hardener)	Light tan
Appearance - Mixed	Black
Components	Two components - requires mixing
Mix Ratio by weight: Part A: Part B	51.4 : 48.6
Mix Ratio by volume: Part A: Part B	1 : 1
Cure	Heat cure
Application	Electronic Encapsulants and Potting & Casting

LOCTITE STYCAST ES 6516 is a mineral filled, two component epoxy adhesive resin with polyamine curative that has very good adhesion to many types of materials. This material is suitable for indoor/outdoor applications including automotive under-hood as it stays flexible at low temperatures. Although this product will harden at ambient temperature, it requires more time than is practical for production situations and requires oven curing.

TYPICAL PROPERTIES OF UNCURED MATERIAL

Part A Properties (Resin)

Density @ 23°C, gm/cc	1.41
Viscosity @ 23 °C, mPa·s (cP)	3,500

Part B Properties (Hardener)

Density @ 23°C, gm/cc	1.33
Viscosity @ 23 °C, mPa·s (cP)	3,500

Mixed Properties

Density @ 23°C, gm/cc	1.39
Mixed Viscosity @ 23°C, mPa·s (cP)	3,500
Working Time (100 g mass) @ 23 °C, hours	>6
Shelf Life @ 23°C (from date of manufacture), days	240

TYPICAL CURING PERFORMANCE

Recommended Curing Conditions

2 to 6 hours @ 105 to 145°C

The above cure profile(s) are guideline recommendation(s). These conditions (time and temperature) may vary based on customers' experience and specific application requirements, as well as customer curing equipment, oven loading and actual oven temperatures.

TYPICAL PROPERTIES OF CURED MATERIAL

Physical Properties :

Hardness, Shore A	53
Complete cure 24 hours in autoclave @ 125°C	-4
24 minutes @ 146°C, 2 hours @ 23°C	28
24 minutes @ 146°C, 21 minutes @ 138°C, 2 hours @ 23°C	42
Coefficient of Thermal Conductivity, Cal x cm/(sec x cm ² x °C)	18.4×10 ⁻⁴
Linear Shrinkage, %	0.21
Volume Shrinkage, %	1.67
Coefficient of Thermal Expansion, in/in/°C	1.4×10 ⁻⁴
Maximum Operating temperature, °C	125
Maximum Peak temperature (episodes 1 hour or less), °C	175
Thermal Shock, 10 cycles @ -55 to 125°C	Pass
Water Absorption (24 hours), %	<1.8
Weight Loss after 168 hours @ 125°C, %	<0.6

Electrical Properties :

Dielectric Strength, volts/mil	>300
Surface Resistivity, ohms	4.09×10 ¹⁷
Volume Resistivity, ohm-cm	1.56×10 ¹⁰
Dielectric Constant / Dissipation Factor :	
100 kHz @ 23°C	4.95/0.057
100 kHz @ 85°C	5.43/0.46

GENERAL INFORMATION

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

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 8 to 28°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 Henkel Representative.

Product Specifications

The technical data contained herein are intended as reference only and are not considered specifications for the product. Product specifications are located on the Certificate of Analysis or please contact Henkel representative.

Approval and Certificate

Please contact Henkel representative for related approval or certificate of this product.

Data Ranges

The data contained herein may be reported as a typical value and/or range values based on actual test data and are verified on a periodic basis.

Conversions

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

Disclaimer

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