

STYCAST 2851 MT

February 2013

PRODUCT DESCRIPTION

LOCTITE STYCAST 2851MT provides the following product characteristics:

Technology	Epoxy
Appearance	Blue liquid
Cure	Heat cure
Product Benefits	<ul style="list-style-type: none"> • One component • High thermal conductivity • Low CTE • Ease of use • Low stress • Excellent chemical and solvent resistance
Operating Temperature	-55 to 155°C
Application	Encapsulant
Typical Assembly Applications	High voltage applications such as Power supplies, Rectifiers, Transformers and Coils

LOCTITE STYCAST 2851MT epoxy encapsulant is designed for general potting applications. LOCTITE STYCAST 2851MT has a slightly grainy consistency due to the filler size.

TYPICAL PROPERTIES OF UNCURED MATERIAL

Brookfield Viscosity , ASTM D2393, mPa·s (cP):

Spindle 6, speed 2.5 rpm 140,000

Density, ASTM D792, g/cm³ 2.6

Shelf Life @ 5°C (from date of manufacture), 6 months

Shelf Life @ 20°C (from date of manufacture), 3 months

Flash Point - See MSDS

TYPICAL CURING PERFORMANCE

Cure Schedule

1 hours @ 120°C

2 hours @ 100°C

5 hours @ 80°C

Cure at any one of the recommended cure schedules.

For optimum performance, follow the initial cure with a post cure of 2 to 4 hours at maximum expected operating temperature.

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.

STYCAST 2851 MT should be used in areas of encapsulation where STYCAST 2851 FT provides too low a thermal conductivity or STYCAST 2851 KT proves too difficult to work with due to settling or large particle size of the filler. For intricate shapes or small holes, STYCAST 2851 MT may be heated gently to 40 - 45°C to lower viscosity.

TYPICAL PROPERTIES OF CURED MATERIAL

Physical Properties

Hardness, Shore D, ASTM D2240 94

Water Absorption, ASTM D 570 , % 0.06

Coefficient of Thermal Expansion , ASTM D3386, ppm/°C 30

Thermal Conductivity , ASTM D2214, W/(m-K) 1.9

Electrical Properties

Dielectric Constant @ 1 mHz, ASTM D150 5.43

Dissipation Factor @ 1 mHz, ASTM D150 0.002

Volume Resistivity @ 25 °C, ASTM D257, ohm-cm >1×10¹⁵

TYPICAL PERFORMANCE OF CURED MATERIAL

Physical Properties:

Flexural Modulus, ASTM D790 N/mm² 128
(psi) (18,600)

Compressive Strength , ASTM-D695 N/mm² 193
(psi) (28,000)

Tensile Modulus, ASTM D412 N/mm² 48
(psi) (7,000)

GENERAL INFORMATION

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

Conversions

(°C x 1.8) + 32 = °F

kV/mm x 25.4 = V/mil

mm / 25.4 = inches

N x 0.225 = lb

N/mm x 5.71 = lb/in

N/mm² x 145 = psi

MPa x 145 = psi

N·m x 8.851 = lb·in

N·m x 0.738 = lb·ft

N·mm x 0.142 = oz·in

mPa·s = cP

DIRECTIONS FOR USE

1. Complete cleaning of the components and substrates should be performed to remove contamination such as dust, moisture, salt and oils which can cause electrical failure, poor adhesion or corrosion in an embedded part.
2. Some separation of components is common during shipping and storage. For this reason, it is recommended that the contents of the shipping container be thoroughly mixed prior to use.
3. To ensure a void-free embedment, vacuum deairing or degassing should be performed to remove any entrapped air introduced during the mixing operation.
4. Pump-down or pull vacuum on the mixture to achieve an ultimate vacuum or absolute pressure of 1 to 5 torr or mm Hg. The foam will rise several times in the liquid height and then subside.
5. Continue vacuum deairing until most of the bubbling has ceased. This usually takes 3 to 10 minutes.
6. To facilitate deairing in difficult to deair materials, add 1 to 3 drops of an air release agent, such as ANTIFOAM 88 into 100 grams of mixture.
7. Pour mixture into cavity or mold.
8. Gentle warming of the mold or assembly reduces the viscosity. This improves the flow of the material into the unit having intricate shapes or tightly packed coils or components.
9. Further vacuum deairing in the mold may be required for critical applications.

Storage

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

Optimal Storage: 5°C. Storage below 5°C or greater than 25°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.

Disclaimer

Note:

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