Technical Data Sheet

LOCTITE STYCAST E 2517

October 2018

PRODUCT DESCRIPTION

LOCTITE STYCAST E 2517 provides the following product characteristics:

Technology	Epoxy
Appearance	Black liquid
Cure	Heat cure
Product Benefits	• One component • Low CTE • Low stress • Low viscosity • High temperature resistance
Operating Temperature	200ºC
Application	Encapsulation
Typical Applications	Heavy duty industrial and automotive applications

LOCTITE STYCAST E 2517 epoxy encapsulant is formulated for use on bare chip protection in a variety of advanced packages where ease of flow and high thermal stability are required.

TYPICAL PROPERTIES OF UNCURED MATERIAL

Viscosity, Rheometer, Plate/Plate, mPa·s (cP)	22,500
Density, g/cm³	1.725
Shelf Life @ -40 to 0°C (from date of manufacture), days	120
Flash Point - See SDS	

TYPICAL CURING PERFORMANCE

Cure Schedule

Precure	1 hour @ 120°C
Full cure	1 hour @ 150°C
Post cure	2 hours @ 200°C

Shrinkage on Cure

Cure Shrinkage, %	1.1

LOCTITE STYCAST E 2517 can be cured for 1 hour @ 150°C. However, the properties of the cured material will depend upon the cure schedule used.

For devices which are affected by higher levels of stress, a low temperature pre-cure step of 1 hour @ 120°C is recommended, this to minimize the occurrence of micro-cracks.

The lowest values for coefficient of linear thermal expansion and highest values for Tg will be obtained when using the post cure steps mentioned.

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	90
Coefficient of Thermal Expansion, ppm/°C	19
Glass Transition Temperature, °C	220
Young's modulus (E) , N/mm²	6,300
Water Absorption, after 24 hours @ 25ºC, %	0.08
Extractable Ionic Content, ppm:	
Chloride (Cl-)	10
Sodium (Na+)	10
Potassium (K+)	10
Ammonium (NH4+)	10
Thermal Conductivity , W/(m-K)	0.5

Electrical Properties

Dielectric Constant / Dissipation Factor @ 25ºC:	
@ 1 kHz	4.1/0.007
Volume Resistivity @ 25 °C, ohm-cm	1.9×10^{15}

GENERAL INFORMATION

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

DIRECTIONS FOR USE

1. This product is packed and shipped in dry ice packs to prevent excessive temperature exposure during shipping.
2. Upon receipt the material should be transferred to storage below 0°C, a freezer operating at -18°C is recommended.
3. The shelf life during which the behavior and properties of the product can be considered to be effectively stable, is 4 months when stored between –40°C and 0°C. At 25°C the behavior and properties of LOCTITE STYCAST E 2517 remain stable for at least 1 day.
4. Packages removed from the storage must first be allowed to return to ambient temperature before use.
5. LOCTITE STYCAST E 2517 can be applied by . Minimal recommended needle diameter is 0.8 mm.
6. The surface on which the product is to be dispensed should be clean and dry and free from all dust or contaminants.
7. In some cases, it may be desirable to preheat the device up to a maximum of 70°C to facilitate the flow of the material.
8. An alternative is to heat the product to maximum 50°C. Its viscosity will then drop from 20 Pa.s (25°C) to approximately 3 Pa.s.
9. To avoid premature gelling, do not heat the product at temperatures higher than 60ºC.

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

Optimal Storage: -40 to 0°C. Storage below -40°C or greater than 0°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
(°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
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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