Technical Data Sheet

LOCTITE STYCAST 2850FTJ CAT 17

March 2022

PRODUCT DESCRIPTION

LOCTITE STYCAST 2850FTJ CAT 17 provides the following product characteristics:

Technology	Epoxy
Appearance (Resin)	Black liquid
Product Benefits	• High temperature resistance • High thermal conductivity • Excellent chemical resistance • Low coefficient of thermal expansion • Low shrinkage
Cure	Room temperature or Heat cure
Application	Potting, Encapsulation
Operating Temperature	-70 to 230ºC

LOCTITE STYCAST 2850FTJ CAT 17 epoxy encapsulant is designed for potting electronic components exposed to harsh environments. This material is also ideal for large and complex castings that require high temperature resistance and thermal conductivity.

LOCTITE STYCAST 2850FTJ can be used with a variety of catalysts. For more information on mixed properties when used with other available catalysts, please contact your local technical service representative for assistance and recommendations.

CATALYST DESCRIPTION

LOCTITE CAT 17 provides the following product characteristics:

Product Benefits	• Temperature resistant • Long work life • High temperature performance • Chemical resistant
Cure	Heat cure
Mix Ratio by weight - Material:Catalyst	100 : 10

TYPICAL UNCURED PROPERTIES

LOCTITE STYCAST 2850FTJ

Brookfield Viscosity , mPa·s (cP):	
Spindle 7, speed 5 rpm	225,000
Density, g/cm³	2.4
Shelf Life @ 25°C (from date of manufacture), days	180

Flash Point - See SDS

TYPICAL UNCURED PROPERTIES AS MIXED

LOCTITE STYCAST 2850FTJ with LOCTITE CAT 17

Viscosity, Brookfield , 25 °C, mPa·s (cP):	150,000
Mixed Density , g/cm³	2.23
Work Life, 100 grams, @ 25ºC, hours	>24

TYPICAL CURING PERFORMANCE

Cure Schedule

LOCTITE STYCAST 2850FTJ with LOCTITE CAT 17

Regular Castings

3 hours @ 125°C plus 3 hours @ 175°C

For larger or extremely large castings

16 hours @ 65°C, plus 6 hours @ 125°C, plus 6 hours @ 150ºC

For optimum performance, follow the initial cure with a post cure of 4 to 6 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 specific application requirements, as well as customer curing equipment, oven loading and actual oven temperatures.

TYPICAL PROPERTIES OF CURED MATERIAL

LOCTITE STYCAST 2850FTJ with LOCTITE CAT 17

Physical Properties

Hardness, Shore D	94
Thermal Conductivity, W/(m·K)	1.34
Water Absorption (24 hr immersion), %	0.2
Coefficient of Thermal Expansion, ppm/ºC	38

Electrical Properties

Dielectric Strength, kV/mm	15.0
Dielectric Constant/Dissipation Factor @ 1 MHz	5.8/0.01
Volume Resistivity @ 25ºC, ohm-cm	$>1\times10^{15}$

GENERAL INFORMATION

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

DIRECTIONS FOR USE

1. Certain resins and hardeners are prone to crystallization. If crystallization does occur, warm the contents of the shipping container to 50 to 60ºC until all crystals have dissolved. Shipping container must be loosely covered during the warming stage to prevent any pressure build-up.
2. Allow contents to cool to room temperature before continuing.
3. Complete cleaning of the substrates should be performed to remove contamination such as oxide layers, dust, moisture, salt and oils which can cause poor adhesion or corrosion in a bonded part.
4. 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.
5. Power mixing is preferred to ensure a homogeneous product.
6. Accurately weigh resin and hardener into a clean container in the recommended ratio. Weighing apparatus having an accuracy in proportion to the amounts being weighed should be used.
7. Blend components by hand, using a kneading motion, for 2 to 3 minutes. Scrape the bottom and sides of the mixing container frequently to produce a uniform mixture.
8. If possible, power mix for an additional 2 to 3 minutes. Avoid high mixing speeds. This can entrap excessive amounts of air. It can also cause overheating of the mixture, resulting in reduced working life.
9. To ensure a void-free embedment, vacuum deairing or degassing should be performed to remove any entrapped air introduced during the mixing operation.
10. Vacuum deair mixture at 1 to 5mm mercury. The foam will rise several times the liquid height and then subside .
11. Continue vacuum deairing until most of the bubbling has ceased. This usually takes 3 to 10 minutes.
12. To facilitate deairing in difficult to deair materials, add 1 to 3 drops of an air release agent, such as ANTIFOAM 88 into 100 gram of mixture.
13. Gentle warming will also help, but pot life will be shortened.
14. Pour mixture into cavity or mold.
15. 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.
16. 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 : 25 °C

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.

Conversions

(°C x 1.8) + 32 = °F
kV/mm x 25.4 = V/mil
mm / 25.4 = inches
N x 0.225 = lb/F
N/mm x 5.71 = lb/in
N/mm^2 x 145 = psi
N/mm^2 = MPa
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

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