

LOCTITE STYCAST 5019

October 2017

PRODUCT DESCRIPTION

LOCTITE STYCAST 5019 provides the following product characteristics:

Technology	Silicone
Technology (Part B)	Silicone
Components	Two components - requires mixing
Appearance, Resin (Part A)	Clear
Appearance, Hardener (Part B)	Clear
Mix Ratio, by weight - Part A: Part B	100 : 10
Mix Ratio by volume: Part A: Part B	100 : 10
Product Benefits	• Optically clear • Non-corrosive • Reversion resistant • Low viscosity • Good tensile strength • Flexible • Easy mix ratio
Cure	Room temperature or Heat cure
Application	Encapsulation, Potting
Operating Temperature	-65 to +200°C

LOCTITE STYCAST 5019 clear, silicone encapsulant is designed for the environmental protection of coils, transformers, relays, circuit boards, connectors, and cladding of optical fibers. It is also recommended for the encapsulation of amplifiers and other functional modules where optical clarity is required.

LOCTITE STYCAST 5019 can be cured over a wide range of temperatures. It can be cured in thick sections and in closed molds.

TYPICAL PROPERTIES OF UNCURED MATERIAL

Part A Properties

Viscosity, Brookfield , 25 °C, mPa·s (cP)	5,000
Density, g/cm ³	1.0
Shelf Life @ 25°C, days	182
Flash Point - See SDS	

Part B Properties

Viscosity, Brookfield , 25 °C, mPa·s (cP)	500
Density, g/cm ³	1.0
Shelf Life @ 25°C, days	182

Mixed Properties

Viscosity, Brookfield , 25 °C, mPa·s (cP)	4,000
Density, g/cm ³	1.0
Work Life (100 g mass) @ 25 °C, hours	30

TYPICAL CURING PERFORMANCE

Cure Schedule

2 to 7 days @ 25°C
1 to 4 hours @ 65°C
20 minutes @ 150°C

Cure at any one of the recommended cure schedules.

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 A	34
Elongation, %	160
Linear Shrinkage, cm/cm	<0.002
Coefficient of Thermal Expansion , ppm/°C	800
Glass Transition Temperature, °C	-120
Thermal Conductivity, W/(m·K)	0.17

Electrical Properties

Volume Resistivity @ 25°C, ohm-cm	>1×10 ¹⁵
Dielectric Constant/Dissipation Factor	2.8/0.003

TYPICAL PERFORMANCE OF CURED MATERIAL

Miscellaneous:

Tensile Strength	N/mm ²	3.5
	(psi)	(500)
Tear Strength	N/mm ²	2,625
	(psi)	(15)

GENERAL INFORMATION

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

DIRECTIONS FOR USE

1. 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.

2. 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.
3. 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.
4. 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.
5. To ensure a void-free embedment, vacuum deairing should be used to remove any entrapped air introduced during the mixing operation.
6. Vacuum deair mixture at 1 to 5 mm mercury. The foam will rise several times the liquid height and then subside.
7. Continue vacuum deairing until most of the bubbling has ceased. This usually takes 3 to 10 minutes.
8. In general, silicone materials exhibit outstanding release properties and will not adhere to most substrates. If adhesion is required, apply a thin, uniform coating of LOCTITE STYCAST S 11NC PRIMER to the clean, dry substrates. Allow LOCTITE STYCAST S 11NC PRIMER to dry for 30 to 60 minutes at room temperature before applying the silicone material.
9. Pour mixture into cavity or mold.
10. 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.
11. Further vacuum deairing in the mold may be required for critical applications.

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 in original, tightly covered containers in clean, dry areas. Storage information may be indicated on the product container labeling.

Optimal Storage: 25°C. Storage below 25°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.

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:

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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