

LOCTITE STYCAST 5877

January 2017

PRODUCT DESCRIPTION

LOCTITE STYCAST 5877 provides the following product characteristics:

Technology	Silicone
Appearance - Part A	Red liquid
Appearance - Part B	Clear liquid
Product Benefits	<ul style="list-style-type: none"> • Two component • Good flexibility • High tear strength • Reversion resistant • Non-corrosive • Low viscosity
Mix Ratio by weight: Part A: Part B	100 : 10
Mix Ratio by volume: Part A: Part B	100 : 15
Cure	Room temperature or Heat cure
Application	Encapsulant
Operating Temperature	-65 to +250 °C
Typical Assembly Applications	Prototype tooling, flexible molds, rollers, and mandrels for electroforming and embossing

LOCTITE STYCAST 5877 is a pourable silicone encapsulant formulated with a low viscosity to form intricate molds with excellent reproduction details. It can be cured over a wide range of temperatures.

TYPICAL UNCURED PROPERTIES

LOCTITE STYCAST 5877 PART A

Brookfield Viscosity , mPa·s (cP)	30,000
Density, g/cm ³	1.5
Shelf Life @ 25°C, days	180
Flash Point - See SDS	

LOCTITE STYCAST 5877 PART B

Viscosity, Brookfield , 25 °C, mPa·s (cP)	60
Density, g/cm ³	1.0
Shelf Life @ 25°C, days	180
Flash Point - See SDS	

TYPICAL UNCURED PROPERTIES AS MIXED

Viscosity, Brookfield , 25 °C, mPa·s (cP)	15,000
Density, g/cm ³	1.4
Work Life, 100 grams @ 25 °C, minutes	30
Flash Point - See SDS	

TYPICAL CURING PERFORMANCE

Cure Schedule

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

Cure at any one of the recommended cure schedules.

Alternate cure schedules may also be possible. Contact your Henkel representative for further information.

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	65
Coefficient of Thermal Expansion, ppm/°C	300
Glass Transition Temperature, °C	-120
Elongation, %	100
Linear Shrinkage, cm/cm	<0.002
Thermal Conductivity , W/(m-K)	0.29

Electrical Properties

Volume Resistivity @ 25°C, ohm-cm	>1×10 ¹⁴
Dielectric Strength, volts/mil	450
Dielectric Constant/Dissipation Factor	3.5/0.01

TYPICAL PERFORMANCE OF CURED MATERIAL

Miscellaneous

Tensile Strength	N/mm ² 5.5 (psi) (800)
Tear Strength	N/mm ² 7,000 (psi) (40)

GENERAL INFORMATION

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

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. The cure of this silicone product may be inhibited through contact with certain contaminants. Avoid contact with butyl and chlorinated rubbers, amines, sulfur or sulfur containing materials, tin containing compounds, or heavy metal salts. Substrates in

question should be evaluated for compatibility before application of this product. In addition, molds, mixing equipment, ovens and other apparatus that will be used in the preparation and curing of this product should be free of inhibiting contaminants.

3. 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.
4. 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.
5. 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.
6. To ensure a void-free embedment, vacuum deairing should be used to remove any entrapped air introduced during the mixing operation.
7. Vacuum deair mixture at 1 to 5 mm mercury. The foam will rise several times the liquid height and then subside. Continue vacuum deairing until most of the bubbling has ceased. This usually requires 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.

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 Technical Service Center or Customer Service Representative.

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.

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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