

LOCTITE STYCAST SI 5225 D1.3

January 2017

PRODUCT DESCRIPTION

LOCTITE STYCAST SI 5225 D1.3(As Mixed) provides the following product characteristics:

Technology	Silicone
Components	Two components - requires mixing
Appearance - Part A	White liquid
Appearance - Part B	Gray liquid
Appearance - Mixed	Gray liquid
Mix Ratio by weight, Part A:Part B	100 : 100
Product Benefits	- Flexible when cured - Primerless adhesion - High temperature resistance
Operating Temperature	-60 to 220 °C
Cure	Heat cure
Application	Potting, Encapsulating

LOCTITE STYCAST SI 5225 D1.3 liquid encapsulant is designed for encapsulation of electronic devices requiring a low viscosity material capable of flowing throughout tightly packed components. LOCTITE STYCAST SI 5225 D1.3 features primerless adhesion when heat cured thus using fewer processing steps than materials that require the use of a surface primer.

TYPICAL PROPERTIES OF UNCURED MATERIAL

Part A Properties

Viscosity, Plate & Plate @ 25 °C, mPa·s (cP):	
Plate 2 cm, 500 µm gap @ Shear rate 15 s ⁻¹	4,500
Density	1.48
Shelf Life @ 25°C, days	180
Flash Point - See SDS	

Part B Properties

Viscosity, Plate & Plate @ 25 °C, mPa·s (cP):	
Plate 2 cm, 500 µm gap @ Shear rate 15 s ⁻¹	3,500
Density	1.4
Shelf Life @ 25°C, days	180
Flash Point - See SDS	

Mixed Properties

Viscosity, Plate & Plate @ 25 °C, mPa·s (cP):	
Plate 2 cm, 500 µm gap @ Shear rate 15 s ⁻¹	4,000
Mixed Density, g/cm ³	1.42
Working Life, hours	4

TYPICAL CURING PERFORMANCE (As Mixed)

Gel Time

Gel Time @ 25 °C, hours	8
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Recommended Curing Conditions

30 minutes @ 120°C

The above profiles are guideline recommendation. Conditions (time and temperature) may vary based on customers' experience and their application requirements, as well as customer drying equipment, oven loading and actual oven temperatures.

TYPICAL PROPERTIES OF CURED MATERIAL (As Mixed)

Physical Properties

Hardness, Shore A	>30
Elongation, %	39
Thermal Conductivity, W/(m·K)	0.31

Electrical Properties

Volume Resistivity, ohm-cm	1.11×10 ¹¹
Surface Resistivity, ohm-cm	1.03×10 ¹⁵
Dielectric Constant @ 1 MHz	2.8

TYPICAL CURED PERFORMANCE AS MIXED

Miscellaneous

Tear Strength, N/m	526
Tensile Strength, MPa	0.74

GENERAL INFORMATION

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

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.

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. Some filler settling 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. Power mixing is preferred to ensure homogeneous product

4. 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
5. 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
6. 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
7. To ensure a void-free embedment, vacuum deairing should be used to remove any entrapped air introduced during the mixing operation
8. 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
9. 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

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. Storage below 0°C or above 30°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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