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LOCTITE

Technical Data Sheet

LOCTITE STYCAST 1090 SI CAT 9

May 2019

PRODUCT DESCRIPTION

LOCTITE STYCAST 1090 SI CAT 9 provides the following product characteristics:

Technology	Epoxy
Appearance (Resin)	Black
Components	Two components - requires mixing
Mix Ratio, (by weight) Resin : Hardener	100 : 11
Product Benefits	• Low density • Low dielectric constant • High compressive strength • Two component
Cure	Room temperature cure
Application	Encapsulation
Operating Temperature	-70 to 125 °C

LOCTITE STYCAST 1090 SI CAT 9 encapsulant is recommended for applications where high compressive stress is applied to encapsulated circuitry - as in deep ocean work. This product will have a minimum effect on electronic circuit operation and shows negligible deformation and water absorption.

LOCTITE STYCAST 1090 SI 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.

TYPICAL PROPERTIES OF UNCURED MATERIAL

Part A Properties *LOCTITE STYCAST 1090 SI*

Viscosity @ 25 °C, mPa·s (cP)	30,000 to 50,000
Specific Gravity	0.6 to 0.7
Shelf Life @ 18 to 25°C, months	12
Flash Point - See SDS	

Mixed Properties

Mixed Viscosity, mPa·s (cP)	5,000 to 10,000
Specific Gravity	0.7 to 0.8
Pot Life @ 25 °C, minutes	30
Flash Point - See SDS	

TYPICAL CURING PERFORMANCE

Cure Schedule

4 to 24 hours @ 25°C

Post Cure

4 hours @ 60 to 100°C may be required to achieve the best reliability results

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 :

Coefficient of Thermal Expansion ASTM D 3386, K^{-1}		58×10^{-6}
Glass Transition TemperatureISO 11359-2, °C		50 to 60
Thermal Conductivity , W/(m-K)		0.13 to 0.18
Shore Hardness, ISO 868, Durometer D		≥75
Tensile Strength, ISO 527-2	N/mm² (psi)	20 (2,900)
Compressive Strength, ISO 604	N/mm² (psi)	65 (9,425)
Compressive Modulus, ISO 604	N/mm² (psi)	2,000 (290,000)

Electrical Properties:

Volume Resistivity, IEC 60093, Ω·cm	$\geq1\times10^{13}$
Dielectric Constant / Dissipation Factor, IEC 60250:	
60Hz	2.9 / 0.025
1 kHz	2.7 / 0.02
1 MHz	2.3 / 0.03

GENERAL INFORMATION

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

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DIRECTIONS FOR USE

1. Accurately weigh resin and hardener into a clean container in the recommended ratio.
2. Mix thoroughly in the can in which it is received.
3. Liquid diluents can be supplied to lower viscosity at some sacrifice in properties.
4. Pour mixture into cavity or mold.
5. Mold release 122 S will prevent adhesion. (Evacuation may be necessary to remove trapped air and is recommended for high quality embedments. It is often convenient to remove the trapped air from the resin prior to pouring into mold, and then again evacuate briefly when the mold is filled).
6. Allow to stand at room temperature for about 4 hours. Removal from the mold prior to that time is possible if the casting is hard.
7. The filler will tend to float during storage. Premixing before use is required.

STORAGE:

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

Optimal Storage : 18 to 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.

Certain resins and hardeners are prone to crystallization. If crystallization does occur, warm the contents of the shipping container to 50 to 60°C until all crystals have dissolved. Be sure the shipping container is loosely covered during the warming stage to prevent any pressure build-up. Allow contents to cool to room temperature before continuing.

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

(°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
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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