

LOCTITE STYCAST 1090 CAT 23LV

September 2020

PRODUCT DESCRIPTION

LOCTITE STYCAST 1090 CAT 23LV provides the following product characteristics:

Technology	Epoxy
Appearance (Resin)	Black
Components	Two components - requires mixing
Mix Ratio, by weight - Resin : Hardener	100 : 18.5
Mix Ratio, by volume - Base : Hardener	100 : 14.5
Product Benefits	<ul style="list-style-type: none"> • Low density syntactic foam • Low CTE • Low dielectric constant • Low shrinkage • Good moisture resistance • Thermally conductive • Low color • Low viscosity • Long pot life • Excellent thermal shock resistance • Excellent low temperature properties
Cure	Room temperature cure
Application	Encapsulation
Operating Temperature	-65 to 105 °C
Surfaces	Glass

LOCTITE STYCAST 1090 CAT 23LV is designed for encapsulation and potting of electronic assemblies that require lower weight such as aerospace applications. LOCTITE STYCAST 1090 CAT 23LV is also available in the color white.

LOCTITE STYCAST 1090 with CAT 23LV 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

Viscosity, Brookfield, 25 °C, mPa·s (cP):	
Speed 10 rpm, # 7	135,000
Specific Gravity	0.85
Shelf Life @ 25°C, months	12
Flash Point - See SDS	

Part B Properties LOCTITE CAT 23LV

Viscosity @ 25 °C, mPa·s (cP)	20 to 30
Flash Point - See SDS	

Mixed Properties

Mixed Viscosity, mPa·s (cP)	5,000
Specific Gravity	0.81
Working Time, 100 g mass, @ 25°C, minutes	60
Flash Point - See SDS	

TYPICAL CURING PERFORMANCE

Cure Schedule

24 hours @ 25°C or
4 to 6 hours @ 45°C or
1 to 2 hours @ 65°C

Post Cure

Post Cure: 2 to 4 hours at the highest expected use 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

Physical Properties :

Thermal Conductivity, W/(m-K)	0.19
Hardness, Shore D	75
Water Absorption 24 hours, %	0.35
Linear Shrinkage, cm/cm	0.001
Compressive Strength, psi	8,900
Flexural strength, ASTM D790	N/mm ² 47 (psi) (6,900)
Tensile Strength, psi	3,900

Electrical Properties:

Volume Resistivity @ 25°C, ohm-cm	>1×10 ¹³
Dielectric Constant @ 1mHz	2.75
Dissipation Factor @ 1mHz	0.05

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. 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.
3. Accurately weigh resin and hardener into a clean container in the recommended ratio.
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. Pump-down or pull vacuum on the mixture to achieve an ultimate vacuum or absolute pressure of 1 to 5 torr or mm Hg. The foam will rise several times in the liquid height and then subside.
8. Continue vacuum deairing until most of the bubbling has ceased. This usually takes 3 to 10 minutes.
9. To facilitate deairing in difficult to deair materials, add a few drops of an air release agent, such as ANTIFOAM 88 into 100 grams of mixture.
10. Gentle warming will also help, but pot life will be shortened.
11. Pour mixture into cavity or mold.
12. 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.
13. 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.

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

$(^{\circ}\text{C} \times 1.8) + 32 = ^{\circ}\text{F}$
 $\text{kV/mm} \times 25.4 = \text{V/mil}$
 $\text{mm} / 25.4 = \text{inches}$
 $\text{N} \times 0.225 = \text{lb/F}$
 $\text{N/mm} \times 5.71 = \text{lb/in}$
 $\text{psi} \times 145 = \text{N/mm}^2$
 $\text{MPa} = \text{N/mm}^2$
 $\text{N}\cdot\text{m} \times 8.851 = \text{lb}\cdot\text{in}$
 $\text{N}\cdot\text{m} \times 0.738 = \text{lb}\cdot\text{ft}$
 $\text{N}\cdot\text{mm} \times 0.142 = \text{oz}\cdot\text{in}$
 $\text{mPa}\cdot\text{s} = \text{cP}$

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