Hysol

STYCAST 1090SI / Catalyst 23LV

August 2010

PRODUCT DESCRIPTION

STYCAST 1090SI / Catalyst 23LV provides the following product characteristics:

Technology	Epoxy
Appearance (Resin)	Black
Components	Two component - requires mixing
Mix Ratio, by weight - Resin : Hardener	100 : 23
Mix Ratio, by volume - Resin : Hardener	100 : 15.5
Product Benefits	• Low density • Low dielectric constant • Two component • Low viscosity • Low cure shrinkage • Low CTE • Long pot life • Low color • Excellent thermal shock and impact resistance • Excellent low temperature properties
Cure	Room temperature cure
Application	Encapsulant
Operating Temperature	-65 to 105 °C
Surfaces	Glass

STYCAST 1090SI / Catalyst 23LV is designed for encapsulation and potting of electronic assemblies that require lower weight such as aerospace applications. It is completely unicellular so moisture absorption is negligible.

STYCAST 1090SI 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 *1090SI*

Viscosity Brookfield, mPa (cP) 10 rpm, #6	40,000
Specific Gravity	0.7
Shelf Life @ 25°C, months	12
Flash Point - See MSDS	

Part B Properties *Catalyst 23LV*

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

Mixed Properties

Mixed Viscosity, mPa·s (cP)	1,800
Specific Gravity	0.72
Working Time, 100 gm mass, @ 25 °C, minutes	60
Flash Point - See MSDS	

TYPICAL CURING PERFORMANCE

Cure Schedule

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

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 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, ppm/°C:		54
Thermal Conductivity, W/mk		0.17
Shore Hardness, ISO 868, Durometer D		78
Flexural strength , ASTM D790	N/mm² (psi)	28 (4,000)
Water Absorption, ASTM D 570 , %		0.4

Electrical Properties:

Volume Resistivity, IEC 60093, Ω·cm	≥1×10^{13}
Dielectric Constant / Dissipation Factor, IEC 60250: 1 MHz	2.9 / 0.01
Dielectric Strength IEC 60243-1, kV/mm	14.8

GENERAL INFORMATION

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

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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 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 a homogeneous product.
3. Blend components by hand, using a kneading motion, for 2 to 3 minutes and 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 which could entrap excessive amounts of air or 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. 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.
9. Gentle warming will also help, but pot life will be shortened.
10. Pour mixture into cavity or mold.
11. 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.
12. 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.

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
N/mm x 5.71 = lb/in
N/mm² x 145 = psi
MPa x 145 = psi
N·m x 8.851 = lb·in
N·m x 0.738 = lb·ft
N·mm x 0.142 = oz·in
mPa·s = cP

Note

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Reference 0.3