



STYCAST 2651-40

Two Component, Low Viscosity, General Purpose Epoxy Encapsulant

Product Description:

STYCAST 2651-40 is a two component, easy to use, low viscosity, epoxy encapsulant with excellent adhesion to metals, plastics and ceramics. It can be cured at room or elevated temperature.

Its viscosity at room temperature is approximately 30 Pa.s prior to addition of catalyst. Viscosity will decrease by elevation of temperature to 40°C. Standard colour is black, but colour coding is possible. The cured material can be readily machined with carbide tools.

Applications:

When cured at elevated temperature with CATALYST 11, STYCAST 2651-40 meets MIL-I-16923 for Types B, C and D. It is stable over a temperature range of -75°C to +175°C.

Instructions for Use:

1. Room Temperature Cure - CATALYST 9.
 - 1.1. Mix the resin in the shipping container until it is uniform in texture. This will normally require 2-5 minutes in 1 or 5 gallon containers.

- 1.2. Use 8-9 parts CATALYST 9 by weight for each 100 parts of STYCAST 2651-40 required. Blend thoroughly. Pot life is about 1/2 hour. Keep CATALYST 9 away from contact with the skin.
 - 1.3. Use vacuum evacuation if necessary, to remove entrained air. Pour.
 - 1.4. Allow to stand at room temperature for 8 hours for handling or demolding. Full properties develop over the following 24 hours.
 - 1.5. Faster cures are possible with CATALYST 9 if oven cured. Cure time and temperature depend on mass and will vary due to other considerations. A typical schedule for a 50 gram casting is 1 hour at 65°C.
2. Elevated Temperature Cure - CATALYST 11.

This method will produce the ultimate in strength properties at high temperature.

 - 2.1. Mix the resin in the shipping container until it is uniform in texture. This will normally require 2-5 minutes in 1 or 5 gallon containers.
 - 2.2. Use 10-11 parts CATALYST 11 by weight for each 100 parts of STYCAST 2651-40 required. Blend thoroughly. The catalyzed resin has at least 4 hours pot life.
 - 2.3. Pour. Use vacuum evacuation only if required (normally this will not be the case). MOLD RELEASE 122 S or Teflon coated mold surfaces are adequate for release of the cured material.
 - 2.4. For castings up to 200 grams, cure can be completed in 2 hours at 100 to 105°C. For larger castings, gel at 75°C or lower, followed by 2 hours at 105°C. For best high temperature properties, post cure for 4-8 hours at 120°C.

Properties Of Material As Supplied:

Property	Test Method	Unit	Value
Chemistry			Epoxy
Appearance	Visual		Black
Density	ASTM-D-792	g/cm ³	1,45 - 1,55
Mixed Viscosity at 25°C	ASTM-D-2393	Pa.s	4 - 6

Technical Data



Cure Schedule:

Please refer to the instructions for use above.

Properties of Material after Application (With CATALYST 11):

Property	Test Method	Unit	Value
Hardness	ASTM-D-2240	Shore D	85 minimum
Compressive Strength	ASTM-D-695	MPa	100 minimum
Elastic Modulus, Compressive	ASTM-D-695	MPa	5400
Impact Strength	ASTM-D-256	J/cm	1,6
Thermal Conductivity	ASTM-D-2214	W/m.K	0,5
Coefficient Of Linear Thermal Expansion	ASTM-D-3386	10^{-6} K^{-1}	45
Linear Shrinkage During Cure	ASTM-D-2566	%	0,2 - 0,4
Volume Resistivity	ASTM-D-257	Ohm.cm	10^{13} minimum
Dielectric Constant			
at 60 Hz	ASTM-D-150		4,7
at 1 kHz	ASTM-D-150		4,5
at 1 MHz	ASTM-D-150		3,8
Dissipation Factor			
at 60 Hz	ASTM-D-150		0,02
at 1 kHz	ASTM-D-150		0,01
at 1 MHz	ASTM-D-150		0,02
Dielectric Strength	ASTM-D-149	kV/mm	17,7
Moisture Absorption In 24 Hours	ASTM-D-570	%	0,1 maximum
Machinability			good
Service Temperature	ASTM-D-794	°C	-75 to +175

Storage and Handling:

Store STYCAST 2651-40 in well sealed, unopened containers at temperatures between 18°C and 25°C.

Storage Temperature (°C)	Usable Shelf Life
18 to 25	1 year



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Health & Safety:

It is recommended to consult the Henkel Corporation product literature, including material safety data sheets, prior to using Henkel Corporation products. These may be obtained from your local sales office.

Attention Specification Writers:

The technical information contained herein is consistent with the properties of the material and should not be used in the preparation of specifications, as it is intended for reference only. For assistance in preparing specifications, please contact your local Henkel Corporation office for details. Please contact Henkel Corporation Quality Assurance for test method details.

E29/09/99-MVR/RVH (0712s)

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