

# LOCTITE STYCAST 2651-40 W1 GOLD

August 2016

## PRODUCT DESCRIPTION

LOCTITE STYCAST 2651-40 W1 GOLD provides the following product characteristics:

<b>Technology</b>	Epoxy
<b>Appearance (Resin)</b>	Gold
<b>Product Benefits</b>	<ul style="list-style-type: none"> <li>• Low viscosity</li> <li>• Room temperature cure capability</li> <li>• Can be used with a variety of catalysts</li> </ul>
<b>Cure</b>	Room temperature or Heat cure
<b>Application</b>	Potting, Encapsulation
<b>Key Substrates</b>	Metals, Plastics and Ceramics

LOCTITE STYCAST 2651-40 W1 GOLD epoxy encapsulant is designed for general potting and encapsulation applications. When fully cured, the material is readily machined with carbide tools.

LOCTITE STYCAST 2651-40 W 1 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 UNCURED PROPERTIES

### LOCTITE STYCAST 2651-40 W1 GOLD

Viscosity @ 25 °C, mPa·s (cP)	33,000
Density, g/cm <sup>3</sup>	1.5
Shelf Life @ 18 to 25°C (from date of manufacture), days	365
Flash Point - See SDS	

## TYPICAL UNCURED PROPERTIES AS MIXED

### LOCTITE STYCAST 2651-40 W1 GOLD with LOCTITE CAT 9

Mix Ratio, Material:Catalyst:	
By Weight	100:8 to 9
Pot Life, minutes	30
Flash Point - See SDS	

### LOCTITE STYCAST 2651-40 W1 GOLD with LOCTITE CAT 11

Mix Ratio, Material:Catalyst:	
By Weight	100:10 to 11
Pot Life, hours	4
Flash Point - See SDS	

## TYPICAL PROPERTIES OF CURED MATERIAL

### LOCTITE STYCAST 2651-40 W1 GOLD with LOCTITE CAT 9

#### Physical Properties

Hardness, Shore D	87.5
Thermal Conductivity, W/(m-K)	0.5
Coefficient of Linear Thermal Expansion, ppm/°C	78
Linear Shrinkage on Cure, %	0.2
Moisture Absorption, 24 hrs immersion, %	0.3
Machinability	Good
Operating temperature, °C	-40 to +175

#### Electrical Properties

Volume Resistivity, minimum, ohm-cm	1×10 <sup>14</sup>
Dielectric Constant / Dissipation Factor: @ 1 MHz	3.8/0.06
Dielectric Strength, kV/mm	17.7

### LOCTITE STYCAST 2651-40 W1 GOLD with LOCTITE CAT 11

#### Physical Properties

Hardness, Shore D	87.5
Thermal Conductivity, W/(m-K)	0.5
Compressive Modulus of Elasticity, MPa	5,400
Coefficient of Linear Thermal Expansion, ppm/°C	45
Linear Shrinkage on Cure, %	0.3
Moisture Absorption, 24 hrs immersion, %	0.1
Machinability	Good
Operating temperature, °C	-70 to +175

#### Electrical Properties

Volume Resistivity, minimum	1×10 <sup>13</sup>
Dielectric Constant / Dissipation Factor: @ 60 Hz	4.7/0.02
@ 1 KHz	4.5/0.01
@ 1 MHz	3.8/0.02
Dielectric Strength, kV/mm	17.7

## TYPICAL PERFORMANCE OF CURED MATERIAL

### LOCTITE STYCAST 2651-40 W1 GOLD with LOCTITE CAT 9

#### Miscellaneous

Compressive Strength, MPa	125
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**LOCTITE STYCAST 2651-40 W1 GOLD  
with LOCTITE CAT 11****Miscellaneous**

Compressive Strength, MPa	125
Impact Strength, J/cm	1.6

**GENERAL INFORMATION**

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

**DIRECTIONS FOR USE****LOCTITE STYCAST 2651-40 W1 GOLD  
with LOCTITE CAT 9 (Room Temperature cure)**

1. Mix resin in the shipping container until it is uniform in texture. This will normally require 2 to 5 minutes in 1 or 5 gallon containers.
2. Mix 8 to 9 parts of LOCTITE CAT 9 for each 100 parts of LOCTITE STYCAST 2651-40 W1 GOLD.
3. Blend thoroughly.
4. Pot life is about 30 minutes.
5. Keep LOCTITE CAT 9 away from contact with the skin.
6. Pour into mold or container. If necessary, trapped air is readily removed by vacuum evacuation..
7. Allow to stand at room temperature for 8 hours for handling or demolding. Full properties develop over the following 24 hours.
8. Faster cured are possible with LOCTITE CAT 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 @ 65°C.

**LOCTITE STYCAST 2651-40 W1 GOLD  
with LOCTITE CAT 11 (Elevated Temperature Cure)**

1. This method will produce the ultimate in strength properties at high temperature.
2. Mix resin in the shipping container until it is uniform in texture. This will normally require 2 to 5 minutes in 1 or 5 gallon containers.
3. Mix 10 to 11 parts of LOCTITE CAT 11 for each 100 parts of LOCTITE STYCAST 2651-40 W1 GOLD.
4. Blend thoroughly.
5. Pot life is about 4 hours.
6. Pour. Use vacuum evacuation only if required (normally this will not be the case). MOLD RELEASE 122S or Teflon coated mold surfaces are adequate for release of the cured material.
7. For castings up to 200 grams, cure can be completed in 2 hours @ 105°C. For larger castings, gel at 75°C or lower, followed by 2 hours @ 105°C.
8. For best high temperature properties, post cure for 4 to 8 hours at 120°C

**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.

**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**

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

**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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