



# STYCAST 3050 Catalyst 9

March 2012

## PRODUCT DESCRIPTION

STYCAST 3050 Catalyst 9 provides the following product characteristics:

<b>Technology</b>	Epoxy
Appearance (Resin)	Dark red
Components	Two component - requires mixing
Product Benefits	<ul style="list-style-type: none"> <li>• Very low viscosity</li> <li>• Excellent penetration into tightly packed assemblies</li> <li>• Good machinability</li> <li>• General purpose</li> <li>• Room temperature cure</li> <li>• Good chemical resistance</li> <li>• Good physical strength</li> </ul>
Mix Ratio, by weight - Material:Catalyst	100 : 7.5
Mix Ratio, by Volume - Material:Catalyst	100 : 12
Operating Temperature	-40 to +130°C
<b>Cure</b>	Room temperature cure and Heat cure
<b>Application</b>	Encapsulant
Typical Assembly Applications	High density circuit assemblies, Coil windings

STYCAST 3050 Catalyst 9 is designed for potting and encapsulation applications with very small physical spacing between parts. The filler system is non-abrasive and readily machinable. This is a consideration when using a dispensing equipment or where subsequent machining of the cured part is required.

STYCAST 3050 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 3050

Viscosity, Brookfield , ASTM D2393, mPa·s (cP)	2,000
Density, ASTM-D-792, g/cm <sup>3</sup>	1.61
Shelf Life @ 25°C, months	6
Flash Point - See MSDS	

### Part B Properties Catalyst 9

Viscosity @ 25 °C, mPa·s (cP)	92.5
Flash Point - See MSDS	

### Mixed Properties

Viscosity, Brookfield , ASTM D2393, mPa·s (cP)	600
Density, ASTM-D-792, g/cm <sup>3</sup>	1.54
Working Life , 100 grams@ 25°C, minutes	45
Flash Point - See MSDS	

## TYPICAL CURING PERFORMANCE

### Cure Schedule

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

For optimum performance, follow the initial cure with a post cure of 2 to 4 hours at the highest expected use temperature.

Alternate cure schedules may also be possible. Contact your Henkel representative for further information.

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

Hardness, Shore D, ASTM D2240	88
Thermal Conductivity, ASTM D-2214, W/mK	0.4
Linear Shrinkage, ASTM D2566, %	0.3

### Electrical Properties

Volume Resistivity @ 25 °C, ASTM D257, ohm-cm	5×10 <sup>15</sup>
Dielectric Strength, ASTM D149, kV/mm	15.7
Dielectric Constant / Dissipation Factor, ASTM D150: @ 1 MHz	4.2/0.04

## TYPICAL PERFORMANCE OF CURED MATERIAL

### Miscellaneous:

Flexural Strength , ASTM D790	N/mm <sup>2</sup> 75 (psi) (10,900)
Compressive Strength , ASTM-D695	N/mm <sup>2</sup> 144 (psi) (20,900)
Tensile Strength , ASTM D412	N/mm <sup>2</sup> 54 (psi) (7,800)

## GENERAL INFORMATION

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

## DIRECTIONS FOR USE

1. Complete cleaning of the components and substrates should be performed to remove contamination such as dust, moisture, salt and oils which can cause electrical failure, poor adhesion or corrosion in an embedded 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. Power mixing is preferred to ensure a homogeneous product.
4. Accurately weigh resin and hardener into a clean container in the recommended ratio. Weighing apparatus having an accuracy in proportion to the amounts being weighed should be used.



5. 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.
6. 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.
7. To ensure a void-free embedment, vacuum deairing should be used to remove any entrapped air introduced during the mixing operation.
8. Vacuum deair mixture at 1 to 5 mm mercury. The foam will rise several times the liquid height and then subside.
9. Continue vacuum deairing until most of the bubbling has ceased. This usually takes 3 to 10 minutes.
10. To facilitate deairing in difficult to deair materials, add drops of an air release agent, such as ANTIFOAM 88 into of mixture.
11. Gentle warming will also help, but pot life will be shortened.
12. Pour mixture into cavity or mold.
13. 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.
14. Further vacuum deairing in the mold may be required for critical applications.

#### Storage

Store in original, tightly covered containers in clean, dry areas. Storage information may be indicated on the product container labeling. Usable shelf life may vary depending on method of application and storage conditions

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.

#### 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.

#### 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

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

#### Note

The data contained herein are furnished for information only and are believed to be reliable. We cannot assume responsibility for the results obtained by others over whose methods we have no control. It is the user's responsibility to determine suitability for the user's purpose of any production methods mentioned herein and to adopt such precautions as may be advisable for the protection of property and of persons against any hazards that may be involved in the handling and use thereof. In light of the foregoing, **Henkel Corporation and its affiliates ("Henkel") specifically disclaims all warranties expressed or implied, including warranties of merchantability or fitness for a particular purpose, arising from sale or use of Henkel products. Henkel specifically disclaims any liability for consequential or incidental damages of any kind, including lost profits.** The discussion herein of various processes or compositions is not to be interpreted as representation that they are free from domination of patents owned by others or as a license under any Henkel patents that may cover such processes or compositions. We recommend that each prospective user test his proposed application before repetitive use, using this data as a guide. This product may be covered by one or more United States or foreign patents or patent applications.

#### Trademark usage

All trademarks in this document are trademarks and/or registered trademarks of Henkel in the US and elsewhere.

Reference 0.0