

# LOCTITE ECCOBOND 50500-1

May 2015

## PRODUCT DESCRIPTION

LOCTITE ECCOBOND 50500-1 provides the following product characteristics:

<b>Technology</b>	Epoxy
<b>Appearance</b>	Black
<b>Components</b>	One-component
<b>Product Benefits</b>	<ul style="list-style-type: none"> <li>• Low stress</li> <li>• Low thixotropy</li> <li>• Low CTE</li> <li>• High purity</li> </ul>
<b>Filler Weight, %</b>	74 to 76
<b>Percent Solids by Weight</b>	100
<b>Cure</b>	Heat Cure
<b>Application</b>	Encapsulant
<b>Operating Temperature</b>	-65 to 150 °C
<b>Typical Assembly Applications</b>	Glob top applications, Protecting wire bonded bare IC's and BGA

LOCTITE ECCOBOND 50500-1 fill encapsulant is designed to be used with STYCAST 50300 HT dam encapsulant in glob top applications. This combination of materials is also suited for the protection of multiple chips and for encapsulating components where a well defined glob height and flat surface are required.

## TYPICAL PROPERTIES OF UNCURED MATERIAL

Viscosity, Brookfield , 25 °C, mPa·s (cP):	
cp #6, 2.5 rpm	25,000 to 45,000
cp #6, 20 rpm	25,000 to 45,000
Specific Gravity	1.8 to 1.84
Shelf Life:	
@ -40 to 0°C, months	4
@ 25°C, days	1
Flash Point - See SDS	

## TYPICAL CURING PERFORMANCE

### Recommended Cure Schedule

1 hours @ 150°C

### Low Stress Cure Schedule

1 hour @ 100°C + 1 hour @ 150°C

**Note:** For devices which are affected by higher levels of stress, a low temperature pre-cure at 100°C is recommended.

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:	
Below Tg, ppm/°C	≤20
Glass Transition Temperature, ISO 11357-2, °C	≥140
Coefficient of Thermal Conductivity, W/(m-K)	0.6 to 0.65
Extractable Ionic Content, ppm:	
Chloride (Cl-)	≤10
Sodium (Na+)	≤10
Potassium (K+)	≤10
Ammonia (NH3+)	≤10
Shore Hardness, ISO 868, Durometer D	≥90
Water Absorption, %:	
7days at room temperature by weight	0.2
24 hour boil test by weight	0.5

### Electrical Properties

Dielectric Constant / Dissipation Factor @ 25°C:	
1kHz	4.1 / 0.008

## GENERAL INFORMATION

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

### THAWING:

1. Allow material to reach room temperature before use.

### DIRECTIONS FOR USE

1. The surfaces on which the adhesive has to be applied should be clean, dry and free from all dust.
2. The outline of the glob, the "dam" is first dispensed with STYCAST 50300 HT.
3. The dam is then filled in with STYCAST 50500-1.
4. After dispensing, both materials can be co-cured.

### STORAGE:

Store product in the unopened container in a dry location. Storage information may be indicated on the product container labeling.

### Optimal Storage : -40 °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**

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

**Disclaimer****Note:**

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Reference **N/A**