Technical Data Sheet

LOCTITE ECCOBOND 50500 D

May 2015

PRODUCT DESCRIPTION

LOCTITE ECCOBOND 50500 D provides the following product characteristics:

Technology	Epoxy
Appearance	Black
Components	One-component
Product Benefits	• Low modulus of elasticity • Low stress • High purity • Non-sag • Low warpage
Filler Weight, %	73 to 77
Percent Solids by Weight	100
Cure	Heat Cure
Application	Encapsulant
Operating Temperature	-65 to 150 °C
Typical Assembly Applications	Glob top applications, Protecting wire bonded bare IC's and BGA

LOCTITE ECCOBOND 50500 D is designed to be used as a dam encapsulant in combination with a "fill" encapsulant in glob top applications for protecting wire bonded bare IC's. 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 @ 25 °C, mPa·s (cP):	
@ 1.5 s^{-1}	110,000 to 140,000
@ 15 s^{-1}	20,000 to 40,000
Specific Gravity	1.75
Shelf Life:	
@ -40 to 0ºC, months	4
@ 25ºC, days	3
Flash Point - See SDS	

TYPICAL CURING PERFORMANCE

Recommended Cure Schedule

2 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 :		
Below Tg, ppm/°C		80
Glass Transition Temperature, °C		70
Thermal Conductivity , W/(m-K)		0.6 to 0.65
Tensile Modulus, DMTA :		
@ 25 °C	N/mm² (psi)	3,500 to 5,500 (507,500 to 797,500)
@ 50 °C	N/mm² (psi)	3,000 to 4,500 (435,000 to 652,500)
@ 70 °C	N/mm² (psi)	900 to 1,200 (130,500 to 174,000)
@ 150 °C	N/mm² (psi)	100 to 200 (14,500 to 29,000)
Extractable Ionic Content, ppm:		
Chloride (Cl-)		20
Sodium (Na+)		10
Potassium (K+)		10
Hardness, Shore D		80
Water Absorption , %:		
7days at room temperature by weight		0.07
24 hour boil test by weight		0.5

Electrical Properties

Dielectric Constant / Dissipation Factor @ 25ºC:	
1kHz	3.7 / 0.01

TYPICAL PERFORMANCE OF CURED MATERIAL

Tensile Lap Shear Strength, MPa	9

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 LOCTITE ECCOBOND 50500 D.
3. The dam is then filled in with a fill encapsulant.
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
(°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
psi x 145 = N/mm²
MPa = N/mm²
N·m x 8.851 = lb·in
N·m x 0.738 = lb·ft
N·mm x 0.142 = oz·in
mPa·s = cP

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Note:
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