Technical Data Sheet

LOCTITE ECCOBOND 3005

August 2012

PRODUCT DESCRIPTION

LOCTITE ECCOBOND 3005 provides the following product characteristics:

Technology	Silicone
Appearance	Off-white
Cure	Heat cure
Product Benefits	• Non-conductive • Low modulus • Good adhesion • Ultra-low moisture absorption • Chemical compatibility with silicone gels
Application	Lid attach
Filler Type	Silica
Typical Package Application(s)	Flip Chip BGA
Other Application Areas	Thermally enhanced stiffener

LOCTITE ECCOBOND 3005 adhesive is designed for lid attach in flip chip BGA applications

The combination of product features result in superior flip chip BGA reliability

This material is sensitive to amines, phosphorus, sulfur and tin containing components

This material needs to be isolated from uncured epoxy-based resins as interaction will inhibit curing

TYPICAL PROPERTIES OF UNCURED MATERIAL

Thixotropic Index (0.5/5 rpm)	≥2.5
Viscosity, Brookfield CP51, 25 °C, mPa·s (cP):	
Speed 5 rpm	44,000
Work Life @ 25°C, hours	24
Shelf Life @ -40°C, days	365
Flash Point - See SDS	

TYPICAL CURING PERFORMANCE

Cure Schedule

30 minutes @ 150°C

The above cure profiles are guideline recommendations. Cure conditions (time and temperature) may vary based on customers' experience and specific application requirements, as well as customer curing equipment, oven loading and actual oven temperatures.

TYPICAL PROPERTIES OF CURED MATERIAL

Physical Properties

Coefficient of Linear Thermal Expansion, ppm/ºC:		
Below Tg		32
Above Tg		136
Glass Transition Temperature (Tg) by TMA, °C		-15
Tensile Modulus, DMTA :		
@ -65 °C	N/mm² (psi)	7,918 (1,148,000)
@ 25 °C	N/mm² (psi)	358 (51,948)
@ 150 °C	N/mm² (psi)	52 (10,824)
Extractable Ionic Content, @ 100°C:		
Chloride (Cl-)		≤10
Sodium (Na+)		≤10
Potassium (K+)		≤10

TYPICAL PERFORMANCE OF CURED MATERIAL

Miscellaneous

Die Shear Strength

120 X 120 mm Si die, Kg, cured 30 minutes @ 150ºC

Substrate	@25°C
Ni plated Cu substrate	≥ 3.0

Die Shear Strength vs Temperature

3 x 3 x 0.38 mm bare Si die on 0.2 mm thick Ni-plated Cu LF, Kg

@25°C	@240°C
7	2

GENERAL INFORMATION

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

THAWING:

1. Allow container to reach room temperature before use.
2. After removing from the freezer, set the syringes to stand vertically while thawing.
3. DO NOT open the container before contents reach 25°C temperature. Any moisture that collects on the thawed container should be removed prior to opening the container.
4. DO NOT re-freeze. Once thawed to 25°C, the adhesive should not be re-frozen.

DIRECTIONS FOR USE

1. The recommended needle size for use is 20 guage.

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.

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. Storage below minus (-)40 °C or greater than minus (-)40 °C can adversely affect product properties.

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 Henkel Representative.

Conversions

(°C x 1.8) + 32 = °F
kV/mm x 25.4 = V/mil
mm / 25.4 = inches
N x 0.225 = lb/F
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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