Technical Data Sheet

LOCTITE ECCOBOND LUX 4047

December 2014

PRODUCT DESCRIPTION

LOCTITE ECCOBOND LUX 4047 provides the following product characteristics:

Technology	Acrylate
Color	Opaque White
Cure	Ultraviolet (UV) light
Product Benefits	• Single component • Photocurable • High viscosity • Low shrinkage • Good mechanical stability
Application	Assembly
Typical Optic Application	Fiber optic assembly and Optoelectronic device assembly
Other Application Areas	LED mounting, Laser diode packaging, Fiber pigtailing and Transceiver potting

LOCTITE ECCOBOND LUX 4047 photocurable adhesive is designed for high throughput optoelectronic assembly operations. This adhesive cures in seconds when exposed to the appropriate intensity of visible (blue) or UV light.

TYPICAL PROPERTIES OF UNCURED MATERIAL

Viscosity @ 25 °C, mPa·s (cP):	
Small sample adapter	120,000
Shelf Life:	
@ 5ºC, months	6
@ 25ºC, months	3
Flash Point - See SDS	

TYPICAL CURING PERFORMANCE

Recommended Cure

UV or visible light

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		80
Coefficient of Linear Expansion:		
Below Tg, in/in/ºC		20×10^{-6}
Above Tg, in/in/ºC		75×10^{-6}
Glass Transition Temperature (Tg), °C:		
DMTA Loss of Modulus		52
DMTA Tan Δ Max		148
Flexural Modulus	N/mm² (psi)	7,901 (1,146,000)
Linear Shrinkage on Cure, %		1.1
Water Absorption, 24-hr immersion, %		0.07

TYPICAL PERFORMANCE OF CURED MATERIAL

Lap Shear Strength @ 25ºC, psi:	
Glass to Glass	1,200

GENERAL INFORMATION

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

THAWING:

1. DO NOT open the package before contents reach ambient temperature.
2. Safe yellow light is recommended for visible light initiated grades during handling prior to curing. Dimmed light may be used if adhesive is only being handled for short periods of time.

DIRECTIONS FOR USE

1. This adhesive is formulated to cure upon exposure to visible (blue) or UV light. Curing with visible light allows curing of highly filled (up to 80% by weight) grades and curing through UV opaque substrates (such as Polycarbonate or Alumina). Use of visible light provides increased operator safety by eliminating exposure to potentially harmful UV radiation. UV curing is particularly advantageous where a very rapid cure of a section is required.
2. For visible light curing, a light source with a peak output at 470 nm is most efficient. For example, a Luxor 2 or 3 curing lamp delivers an output in excess of 150 mW/cm² at this wavelength, curing in <1 minute to a depth of 12 mm unfilled and 5 mm in filled grades.
3. For UV cure, a wide range of commercially available lamp systems are available, permitting curing of bond profiles in seconds coupled with a tack-free surface.

AVAILABILITY

1. This adhesive is available in a variety of syringes, ranging from 2.5ml to 10ml.

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: 25°C. Storage below 5°C or greater than 25°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 Technical Service Center or Customer Service Representative.

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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Reference 1

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