

LOCTITE ECCOBOND LUX A4083T

September 2014

PRODUCT DESCRIPTION

LOCTITE ECCOBOND LUX A4083T provides the following product characteristics:

Technology	Acrylate
Color	Clear Pale Yellow
Cure	Ultraviolet (UV) light, Visible light and Heat cure
Product Benefits	<ul style="list-style-type: none"> • One component • Photocurable • Excellent adhesion • Optical grade
Application	Assembly
Substrates	Glass and Stainless Steel
Typical Assembly Applications	Connection Terminations and General Bonding

LOCTITE ECCOBOND LUX A4083T photocurable adhesive is formulated to enhance productivity in the assembly of optical, fiber optic, and optoelectronic devices. In addition to light cure, this adhesive contains a secondary thermal cure initiator.

TYPICAL PROPERTIES OF UNCURED MATERIAL

Viscosity, Brookfield SP #27, 25 °C, mPa·s (cP):	
Speed 10 rpm	300
Shelf Life:	
@ 25°C, days	91
@ 0 to 5°C, days	183
Flash Point - See SDS	

TYPICAL CURING PERFORMANCE

Recommended UV Cure

Light Source:	
Ultraviolet (UV) light:	
UV Wavelength, nm	365
Light Intensity @ bondline, mW/cm ²	50
Visible Light:	
Visible (Blue light), nm	470
Light Intensity @ bondline, mW/cm ²	100

Secondary Thermal Cure

- 1 hour @ 100°C or
- 2 hours @ 80°C

Shrinkage on Cure

Linear Shrinkage on Cure, %	2.3
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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	170
Above Tg, ppm/°C	450
Glass Transition Temperature (Tg), °C	104
Moisture Absorption	
Intrinsic Loss dB cm⁻¹:	
@ 830 nm	<1.7
@ 1,320 nm	<1.0
@ 1,550 nm	<1.6
Flexural Modulus	N/mm ² 250.07 (psi) (36,260)
Hardness, Shore D	70
Refractive Index:	
@ 589 nm	1,506
@ 830 nm	1,499
@ 1,320 nm	1,493
@ 1,550 nm	1,488

TYPICAL PERFORMANCE OF CURED MATERIAL

Lap Shear Strength @25°C	N/mm ² 16
(Glass to glass)	(psi) (2,320)

GENERAL INFORMATION

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

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, Aluminis, etc). 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 6 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.
4. Packages removed from storage should be allowed to return to ambient temperature before use.
5. A safe yellow light is recommended for visible light initiated grades during handling prior to use. Dimmed light may be used if the adhesive is only being handled for short periods of time.
6. This adhesive contains a secondary thermal cure initiator to allow cure of bond areas shadowed from light.
7. The adhesive should be light cured first, followed by thermal cure at 100°C for 1 hour. The minimum temperature for thermal cure

is 85°C with the time extended to 2 hours.

AVAILABILITY

1. This adhesive is available in a variety of syringes, ranging from 3 ml to 30ml.

STORAGE:

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

Optimal Storage : 0 to 5 °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:

The information provided in this Technical Data Sheet (TDS) including the recommendations for use and application of the product are based on our knowledge and experience of the product as at the date of this TDS. The product can have a variety of different applications as well as differing application and working conditions in your environment that are beyond our control. Henkel is, therefore, not liable for the suitability of our product for the production processes and conditions in respect of which you use them, as well as the intended applications and results. We strongly recommend that you carry out your own prior trials to confirm such suitability of our product.

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Reference 1