

# LOCTITE ECCOBOND 3781UV

September 2018

## PRODUCT DESCRIPTION

LOCTITE ECCOBOND 3781UV provides the following product characteristics:

<b>Technology</b>	Acrylate
<b>Appearance</b>	Translucent amber liquid
<b>Product Benefits</b>	<ul style="list-style-type: none"> <li>One component, requires no mixing</li> </ul>
<b>Cure</b>	Ultraviolet (UV) light
<b>Application</b>	Device assembly, Structural bonding

LOCTITE ECCOBOND 3781UV is a single component, UV light curable sealant for LCD end-sealing applications.

## TYPICAL PROPERTIES OF UNCURED MATERIAL

Brookfield Viscosity, RVT, mPa·s (cP):

Spindle 5, Speed 20 rpm @ 25°C 12,000

Flash Point - See SDS

## TYPICAL CURING PERFORMANCE

### Recommended UV Cure Condition

Light Source and Condition:

High pressure mercury UV lamp:

Light Intensity, mW/cm<sup>2</sup> 100

### Tack Free Time

Tack Free Time, seconds 2

### Depth of Cure

Depth of Cure, cured 20 seconds @ 100 mW/cm<sup>2</sup>, mm 3.7

UV intensities where quoted are measured at 365 nm using an USHIO UIT-101 UV meter

LOCTITE ECCOBOND 3781UV can be cured by irradiation with ultraviolet of sufficient intensity. To obtain full cure on surfaces exposed to air, the intensity of UV radiation at 220 to 260 nm will accelerate the tack free cure of surface. The cure rate and ultimate depth of cure will depend on light intensity, the spectral distribution of the light source, the exposure time and the light transmittance of the substrates.

The above cure profile is a guideline recommendation. Cure rate and ultimate depth of cure depend on light intensity, spectral distribution of light source, exposure time and the light transmittance of the substrate.

## TYPICAL PROPERTIES OF CURED MATERIAL

Sample cured 120 seconds @ 100 mW/cm<sup>2</sup>, using a high pressure mercury lamp

### Physical Properties

Hardness, Shore D	82
Glass Transition Temperature (T <sub>g</sub> ) by DMTA, °C	68
Coefficient of Thermal Expansion :	
@ 25°C, °C	140×10 <sup>-6</sup>
@ 80 to 120°C, °C	180×10 <sup>-6</sup>
Water Absorption, 24 hours @ 25°C, %	1.7

### Electrical Properties

Dielectric Constant / Loss:

@ 10 kHz	3.9/0.03
@ 1 MHz	3.5/0.04
@ 10 MHz	3.3/0.05
Volume Resistivity, ohm-cm	1.3×10 <sup>16</sup>
Surface Resistivity, ohms	4.0×10 <sup>15</sup>
Dielectric Strength, kV/mm	27

## TYPICAL PERFORMANCE OF CURED MATERIAL

Samples cured using a high pressure mercury light source

### Shear Strength :

Tensile Shear Strength, cured 40 seconds @ 100 mW/cm<sup>2</sup>, 365 nm UV wavelength:

Grit blasted mild steel pin to glass	N/mm <sup>2</sup> 11
	(psi) (16,099)

Bonded Torque Strength, cured 300 seconds @ 6 mW/cm<sup>2</sup>, 365 nm UV wavelength:

Grit blasted aluminum hex button to glass	N/mm <sup>2</sup> 150
	(psi) (21,755)

## GENERAL INFORMATION

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

### 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 : 10 to 27 °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.

**Conversions**

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

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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**