

# LOCTITE ECCOBOND EN UV9070

October 2015

## PRODUCT DESCRIPTION

LOCTITE ECCOBOND EN UV9070 provides the following product characteristics:

|                         |                                                                                     |
|-------------------------|-------------------------------------------------------------------------------------|
| <b>Technology</b>       | Acrylate                                                                            |
| <b>Appearance</b>       | Bone-white to beige translucent paste                                               |
| <b>Product Benefits</b> | <ul style="list-style-type: none"> <li>Fast UV cure</li> <li>Thixotropic</li> </ul> |
| <b>Cure</b>             | Ultraviolet (UV) light                                                              |
| <b>Application</b>      | Edgebond                                                                            |

LOCTITE ECCOBOND EN UV9070 single component, UV curable adhesive is designed to improve reliability in electronic component BGA edgebonding applications. Its thixotropic nature reduces migration of the liquid product after application to the substrate. This flexible material is engineered to enhance the load bearing and shock absorbing properties of the bonded area.

## TYPICAL PROPERTIES OF UNCURED MATERIAL

|                                                     |       |
|-----------------------------------------------------|-------|
| Viscosity, HAAKE PK-100, PK1.2 @ 25 °C, mPa·s (cP): |       |
| @ 20 s <sup>-1</sup>                                | 7,400 |
| Thixotropic Index (20/50 rpm)                       | 1.54  |
| Specific Gravity @ 25 °C, g/cm <sup>3</sup>         | 1.1   |
| Flash Point - See SDS                               |       |

## TYPICAL CURING PERFORMANCE

### Fixture Time

UV fixture time is defined as the light exposure time required to develop a shear strength of 0.1 N/mm<sup>2</sup>.

|                                                    |     |
|----------------------------------------------------|-----|
| UV Fixture Time, Glass microscope slides, seconds: |     |
| 6 mW/cm <sup>2</sup> , measured @ 365 nm           | ≤10 |

### Recommended UV Cure

|                                           |     |
|-------------------------------------------|-----|
| Light Source and Condition                |     |
| Ultraviolet (UV) light                    |     |
| Light Intensity, mW/cm <sup>2</sup>       | 100 |
| UV Wavelength, nm                         | 365 |
| Light Dose, seconds                       | 20  |
| Cure Depth under optimum conditions, inch | 0.2 |

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

|                                                           |                       |
|-----------------------------------------------------------|-----------------------|
| Glass Transition Temperature (T <sub>g</sub> ) by DMA, °C | 120                   |
| Coefficient of Thermal Expansion :                        |                       |
| Below T <sub>g</sub> , ppm/°C                             | 111                   |
| Above T <sub>g</sub> , ppm/°C                             | 194                   |
| Storage Modulus, DMA @ 25 °C                              | N/mm <sup>2</sup> 800 |
|                                                           | (psi) (116,030)       |

### Water Absorption, %:

|                                          |     |
|------------------------------------------|-----|
| After 24 hours in dionized water @ 25 °C | 1.8 |
| After 2 hours immersion in boiling water | 3.9 |

### Extractable Ionic Content, , ppm:

|                             |     |
|-----------------------------|-----|
| Chloride (Cl <sup>-</sup> ) | <15 |
| Sodium (Na <sup>+</sup> )   | <15 |
| Potassium (K <sup>+</sup> ) | <15 |

## TYPICAL PERFORMANCE OF CURED MATERIAL

### Shear Strength :

|                      |                     |
|----------------------|---------------------|
| Lap Shear Strength : |                     |
| Polycarbonate to FR4 | N/mm <sup>2</sup> 8 |
|                      | (psi) (1,160)       |

## GENERAL INFORMATION

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

## DIRECTIONS FOR USE

1. This product is light sensitive; exposure to daylight, UV light and artificial lighting should be kept to a minimum during storage and handling.
2. The product should be dispensed from application with black feedlines.
3. For best performance bond surfaces should be clean and free from grease.
4. Apply adhesive to one of the bond surfaces and assemble immediately.
5. Cure rate is dependent on lamp intensity, distance from light source, depth of cure needed or bondline gap and light transmission of the substrate through which the radiation must pass.
6. Cooling should be provided for temperature sensitive substrates such as thermoplastics.
7. Crystalline and semi-crystalline thermoplastics should be checked for risk of stress cracking when exposed to liquid adhesive.
8. Excess uncured adhesive can be wiped away with organic solvent (e.g. Acetone).
9. Bonds should be allowed to cool before subjecting to any service loads.

## 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: 8 to 28°C. Storage below 8°C or greater than 28 °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.

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#### 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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