

# LOCTITE ECCOBOND UF 3917

February 2020

## PRODUCT DESCRIPTION

LOCTITE ECCOBOND UF 3917 provides the following product characteristics:

<b>Technology</b>	Epoxy
<b>Appearance</b>	Black liquid
<b>Cure</b>	Heat cure
<b>Product Benefits</b>	<ul style="list-style-type: none"><li>● One component</li><li>● Void-free underfill</li><li>● Low CTE</li><li>● Room temperature flow capability</li><li>● Good Water Resistance</li><li>● No settling</li><li>● Green product</li></ul>
<b>Application</b>	Encapsulation, Underfill
<b>Typical Package Application</b>	CSP, BGA and WLCSP

LOCTITE ECCOBOND UF 3917 is formulated for WLCSP, with good flowability under room temperature. This material can underfill devices with 50micron geometries. It provides a uniform and void-free encapsulant underfill, maximizing the device's temperature cycling capability, distributing stress away from solder connects.

## TYPICAL PROPERTIES OF UNCURED MATERIAL

Viscosity, Brookfield CP40, 25 °C, mPa·s (cP):	
Speed 20 rpm	520
Work Life @ 25°C, hours	24
Shelf Life @ -40°C, days	180
Flash Point - See SDS	

## TYPICAL CURING PERFORMANCE

### Recommended Cure

10 minutes @ 150°C

The above cure profile is a guideline recommendation. 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 (Tg) by TMA, °C	118
Coefficient of Thermal Expansion, :	
Below Tg, ppm/°C	43
Above Tg, ppm/°C	136
Storage Modulus, DMA @ 25 °C	N/mm <sup>2</sup> 5,601
	(psi) (812,000)

## TYPICAL PERFORMANCE OF CURED MATERIAL

### Shear Strength

Die Shear Strength:	
3 x 3 mm <sup>2</sup> die, kg:	
Si die on glass	23
Si die on FR4	19

## GENERAL INFORMATION

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

## DIRECTIONS FOR USE

1. Product is shipped at about -40°C with dry ice packs to prevent excessive temperature exposure during shipping.

## 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

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

$(^{\circ}\text{C} \times 1.8) + 32 = ^{\circ}\text{F}$

$\text{kV/mm} \times 25.4 = \text{V/mil}$

$\text{mm} / 25.4 = \text{inches}$

$\text{N} \times 0.225 = \text{lb/F}$

$\text{N/mm} \times 5.71 = \text{lb/in}$

$\text{psi} \times 145 = \text{N/mm}^2$

$\text{MPa} = \text{N/mm}^2$

$\text{N}\cdot\text{m} \times 8.851 = \text{lb}\cdot\text{in}$

$\text{N}\cdot\text{m} \times 0.738 = \text{lb}\cdot\text{ft}$

$\text{N}\cdot\text{mm} \times 0.142 = \text{oz}\cdot\text{in}$

$\text{mPa}\cdot\text{s} = \text{cP}$

## 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. Any liability in respect of the information in the Technical Data Sheet or any other written or oral recommendation(s) regarding the concerned product is excluded, except if otherwise explicitly agreed and except in relation to death or personal injury caused by our negligence and any liability under any applicable mandatory product liability law.

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