

LOCTITE ECCOBOND UF 3915

September 2015

PRODUCT DESCRIPTION

LOCTITE ECCOBOND UF 3915 provides the following product characteristics:

Technology	Epoxy
Appearance	Black liquid
Cure	Snap Cure or Heat cure
Product Benefits	<ul style="list-style-type: none">• Halogen free• One component• Snap curable• Fast flow• High Tg• Easy rework• High fracture toughness• Excellent thermal cycle performance• Compatible with most Pb-free solders• Stable electrical performance under thermal/humidity bias
Application	Underfill
Typical Package Application	WLCSP and Flip chip devices

LOCTITE ECCOBOND UF 3915 reworkable underfill is specially designed for flip chip device applications.

TYPICAL PROPERTIES OF UNCURED MATERIAL

Viscosity, Brookfield CP51, 25 °C, mPa·s (cP):	
Speed 20 rpm	5,500
Thixotropic Index	1.1
Specific Gravity, Density Cups, g/ml	1.66
Work Life @ 25°C, hours	24
Shelf Life @ -40 °C, days	180
Flash Point - See SDS	

TYPICAL CURING PERFORMANCE**Snap Cure Schedule**

7 minutes @ 160°C

Alternate Cure Schedule

20 minutes @ 130°C or

10 minutes @ 150°C

Substrate Temperature

Substrate Temperature, °C 60 to 80

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	125
Coefficient of Thermal Expansion :	
Below Tg, ppm/°C	25
Above Tg, ppm/°C	100
Storage Modulus, DMA @ 25 °C	N/mm ² 7,600
	(psi) (1,102,290)
Fracture Toughness K1c, Instron, MPa(m ^{1/2})	2.2

Electrical Properties

Dielectric Constant / Dissipation Factor:	
@ 850 MHz	3.32/0.048
@ 1575 MHz	3.40/0.052
@ 2450 MHz	3.35/0.051
@ 5000 MHz	3.26/0.050

TYPICAL PERFORMANCE OF CURED MATERIAL**Shear Strength**

Lap Shear Strength :	
PCB to PCB	N/mm ² 10
	(psi) (1,465)

GENERAL INFORMATION

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

THAWING:

1. Allow container to reach room temperature before use.
2. After removing from the freezer, set the syringes to stand vertically while thawing.
3. DO NOT re-freeze. Once thawed to °C, the adhesive should not be re-frozen.

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: -45 to -35°C. Storage below -45°C or above -35°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 $(^{\circ}\text{C} \times 1.8) + 32 = ^{\circ}\text{F}$ $\text{kV/mm} \times 25.4 = \text{V/mil}$ $\text{mm} / 25.4 = \text{inches}$ $\text{N} \times 0.225 = \text{lb}$ $\text{N/mm} \times 5.71 = \text{lb/in}$ $\text{N/mm}^2 \times 145 = \text{psi}$ $\text{MPa} = \text{N/mm}^2$ $\text{MPa} \times 145 = \text{psi}$ $\text{N}\cdot\text{m} \times 8.851 = \text{lb}\cdot\text{in}$ $\text{N}\cdot\text{m} \times 0.738 = \text{lb}\cdot\text{ft}$ $\text{N}\cdot\text{mm} \times 0.142 = \text{oz}\cdot\text{in}$ $\text{mPa}\cdot\text{s} = \text{cP}$ **Disclaimer****Note:**

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