

# LOCTITE ECCOBOND EN 3915T

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## PRODUCT DESCRIPTION

LOCTITE ECCOBOND EN 3915T provides the following product characteristics:

<b>Technology</b>	Epoxy
<b>Appearance</b>	Black liquid
<b>Product Benefits</b>	<ul style="list-style-type: none"> <li>• Thixotropic</li> <li>• Low CTE</li> <li>• Halogen free</li> <li>• Fast cure</li> </ul>
<b>Cure</b>	Heat cure
<b>Application</b>	Encapsulant
<b>Typical Package Application</b>	Flip chip devices

LOCTITE ECCOBOND EN 3915T encapsulant is specially designed for flip chip device applications. This material is formulated to be thixotropic thus reducing liquid migration after it is applied to the substrate.

## TYPICAL PROPERTIES OF UNCURED MATERIAL

Viscosity, Rheometer, mPa·s (cP):	
Cone 20 mm, Angle 2° @ Shear rate 20 s <sup>-1</sup>	22,000
Thixotropic Index	3.5
Specific Gravity, g/ml	1.66
Pot Life @ 25°C, (25% increase in viscosity), hours	24
Shelf Life @ -40 °C, days	180
Flash Point - See SDS	

## TYPICAL CURING PERFORMANCE

### Cure Schedule

7 minutes @ 160°C

### Alternate Cure Schedule

10 minutes @ 150°C or

20 minutes @ 130°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 (T <sub>g</sub> ) by TMA, °C	130
Coefficient of Thermal Expansion :	
Below T <sub>g</sub> , ppm/°C	24
Above T <sub>g</sub> , ppm/°C	103
Storage Modulus, DMA @ 25 °C	N/mm <sup>2</sup> 9,400
	(psi) (1,363,355)

## GENERAL INFORMATION

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

### Thawing:

1. Typical thaw times are listed as follows:
  - 1.5 hours for 30 cc syringes
  - 2 to 3 hours for 55 cc syringes
2. Allow container to reach room temperature before use.
3. After removing from the freezer, set the syringes to stand vertically while thawing.
4. DO NOT re-freeze. Once thawed to 25°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: -40 to -35°C.

Storage below -40°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

(°C x 1.8) + 32 = °F
kV/mm x 25.4 = V/mil
mm / 25.4 = inches
N x 0.225 = lb
N/mm x 5.71 = lb/in
psi x 145 = N/mm <sup>2</sup>
MPa = N/mm <sup>2</sup>
N·m x 8.851 = lb·in
N·m x 0.738 = lb·ft
N·mm x 0.142 = oz·in
mPa·s = 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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