

# LOCTITE® ECCOBOND UF 3808

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## PRODUCT DESCRIPTION

LOCTITE® ECCOBOND UF 3808 provides the following product characteristics:

<b>Technology</b>	Epoxy
<b>Appearance</b>	Black liquid
<b>Components</b>	One-component
<b>Product benefits</b>	<ul style="list-style-type: none"> <li>• High Tg</li> <li>• Low CTE</li> <li>• Reworkable</li> <li>• Halogen free</li> <li>• One component</li> <li>• Room temperature flow capability</li> <li>• Fast cure at moderate temperatures</li> <li>• Compatible with most Pb-free solders</li> <li>• Stable electrical performance in temperature humidity bias</li> </ul>
<b>Cure</b>	Heat cure
<b>Application</b>	Underfill
<b>Typical assembly applications</b>	Chip scale packages and BGA

LOCTITE® ECCOBOND UF 3808 capillary underfill is designed to cure quickly at low temperatures to minimize stress to other component. When cured, this material provides excellent mechanical properties to protect solder joints during thermal cycling.

## TYPICAL PROPERTIES OF UNCURED MATERIAL

Viscosity, Physica, CP50-1, mPa·s (cP):	
@ 1,000 s <sup>-1</sup>	348
Specific gravity	1.16
Pot life @ 25°C, (25% viscosity increase), days	3
Shelf life @ -20°C, days	365
Flash point - see SDS	

## TYPICAL CURING PERFORMANCE

### Cure schedule

≥8 minutes @ 130°C

### Alternative curing conditions

5 minutes @ 150°C

The above cure profiles are guideline recommendations. These conditions (time and temperature) may vary based on customers' experience and specific application requirements, as well as customer curing equipment, oven loading and actual oven temperatures.

## TYPICAL PROPERTIES OF CURED MATERIAL

### Physical properties

Coefficient of thermal expansion, ppm/°C:	
Below Tg	55
Above Tg	171
Glass transition temperature (Tg) by TMA, °C	113
Storage modulus, DMA	
@25°C	N/mm <sup>2</sup> 2,610 (psi) (379,000)

### Electrical properties

Dielectric constant / Dissipation factor @ 23°C	
@ 1 GHz	3.19 / 0.0099
@ 2 GHz	3.24 / 0.0088

## GENERAL INFORMATION

Please consult the Safety Data Sheet (SDS) for safe handling information of this product.

### Thawing

1. Typical thaw times are listed as follows:
  - 1 hour for 10 cc syringes
  - 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 open the container before contents reach 25°C temperature. Any moisture that collects on the thawed container should be removed prior to opening the container.
5. DO NOT re-freeze. Once thawed, the adhesive should not be re-frozen.

### Direction for use

1. Thawed material should immediately be placed on dispense equipment for use.
2. If the adhesive is transferred to a final dispensing reservoir, care must be exercised to avoid entrapment of contaminants and/or air into the adhesive.
3. Adhesive must be completely used within the product's recommended work life.

**Storage**

Store product in the unopened container in a dry location. Storage information may be indicated on the product container labeling.

**Optimal storage: -25 to -15°C. Storage above -15°C can adversely affect product properties.**

Material removed from containers may be contaminated during use. Do not return product to the original container. Henkel 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 Henkel representative.

**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 the specifications of this product.

**Conversions**

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

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