

LOCTITE® ECCOBOND UF 3927

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PRODUCT DESCRIPTION

LOCTITE® ECCOBOND UF 3927 provides the following product characteristics:

Technology	Epoxy
Appearance	Black liquid
Cure	Heat cure
Product Benefits	<ul style="list-style-type: none"> • One component • Void-free underfill • Low CTE • Room temperature flow capability • Reworkable • No settling • Green product
Application	Electronic Encapsulants, Circuit board underfill
Typical Package Application(s)	CSP, BGA, WLCSP

LOCTITE® ECCOBOND UF 3927 is designed for WLCSP chip applications. It is specially formulated with good flowability under suitable board pre-heat temperature. This material can underfill devices with 50 µm geometries. LOCTITE® ECCOBOND UF 3927 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	877
Work Life @ 25°C, estimated, hours	48
Shelf Life @ -40°C, estimated, days	180

TYPICAL CURING PERFORMANCE

Cure Schedule

15 minutes @ 130°C

The above cure profile(s) are guideline recommendation(s). 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, :	
Below Tg, ppm/°C	45
Above Tg, ppm/°C	157
Glass Transition Temperature (Tg) by TMA, °C	122
Storage Modulus, DMA:	
@ 25°C	N/mm² 5,100 (psi) (739,692)

Adhesion Properties

Die Shear Strength, 3 x 3 mm², kg/die:	
Si die on FR4	19

GENERAL INFORMATION

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

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 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.
4. DO NOT re-freeze. Once thawed to 25°C, the adhesive should not be re-frozen.

DIRECTIONS 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. It is suggested to control moisture level when using this product, including pre-heating and exposure time after dispensing. Detailed control method should follow environment condition.
4. 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: -40°C. Storage below -40°C or above

-40°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 Henkel Representative.

Not for product specifications

The technical data contained herein are intended as reference only. Please contact your local Henkel representative for assistance and recommendations on the specifications of this product.

Conversions

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

Disclaimer

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