

LOCTITE ECCOBOND SB 50

October 2014

PRODUCT DESCRIPTION

LOCTITE ECCOBOND SB 50 provides the following product characteristics:

Technology	Epoxy
Appearance	Black
Cure	Heat cure
Product Benefits	• No-flow characteristics • Excellent adhesion • Reworkable • Low cure temperature
Application	Edgebond
Typical Package Application	Chip scale packages and BGA

LOCTITE ECCOBOND SB 50 underfill material is ideal for high volume assembly processes. As the product does not flow under the solder array, it is ideal for large packages where underfill flow is challenging.

TYPICAL PROPERTIES OF UNCURED MATERIAL

Viscosity, Cone & Plate, mPa·s (cP)

Shear Gradient: 1 s ⁻¹	119,000
Shear Gradient: 10 s ⁻¹	19,000
Shear Gradient: 100 s ⁻¹	7,000

Work Life @ 25°C, days 4

Shelf Life @ 25°C, days 183

Flash Point - See SDS

TYPICAL CURING PERFORMANCE

Cure Schedule

4 minutes @ 120°C

Recommended Ramp Rate:

30°C/ minute or less

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

Coefficient of Thermal Expansion :

Below Tg, ppm/°C	70
Glass Transition Temperature (Tg) by TMA, °C	30
Storage Modulus, DMA, MPa	1,700

GENERAL INFORMATION

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

THAWING:

1. After removing from the freezer, set the syringes to stand vertically while thawing.
2. Syringes should thaw a minimum of 2 hours.
3. DO NOT re-freeze. Once thawed, the adhesive should not be re-frozen.

DIRECTIONS FOR USE

1. Dispense a bead of LOCTITE ECCOBOND SB 50 along the outer corners of the component with the needle/nozzle heated to 45°C
2. Apply only 25% of the length of the component (for a 1 mm wide component only apply 0.25 mm on each side) to obtain performance characteristics
3. Because LOCTITE ECCOBOND SB 50 is thixotropic, it will not flow under the component, leaving a nice fillet on the corner of the component

Rework Procedure

1. Remove the component from the substrate by using local application of heat onto the component.
2. The recommended heat profile is identical to the profile used during initial assembly.
3. Once the solder has reached temperatures above its reflow temperatures, lift the component off by using a slight twisting motion.
4. The site should be cleaned, removing any excess underfill and solder remaining on the PCB site.
5. Use appropriate flux remover or solvent.
6. A non-contact, vacuum method is preferred because it minimizes potential damage to the PCB and solder-mask.
7. Total time required for component removal is about 5 to 7 minutes.

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: -20°C. Storage below -20°C or greater than minus -20°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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Reference 0.3