Technical Data Sheet

LOCTITE ECCOBOND UF 8807

September 2012

PRODUCT DESCRIPTION

LOCTITE ECCOBOND UF 8807 provides the following product characteristics:

Technology	Cyanate Ester
Cure	Heat cure
Product Benefits	• High Tg • Low CTE • Low stress • High flow speed • Electrically Insulating • Fast cure at low temperatures • Superior adhesion after moisture testing • Excellent flow characteristics for high density arrays
Filler Type	Silica
Application	Encapsulant
Typical Package Application	CSP, HDI and MPM
Key Substrates	Organic substrates
Percent Solids, %	63.5

LOCTITE ECCOBOND UF 8807 is formulated using a novel Moisture Resistant Cyanate Ester (MRCE) chemistry. This material's characteristics help to reduce thermal and mechanical stresses between CSP packages and HDI subtrates in MPM applications. An optimized particle size distribution allows LOCTITE ECCOBOND UF 8807 adhesive to flow rapidly into gaps of 10 mil and greater to form a protective polymer when cured.

TYPICAL PROPERTIES OF UNCURED MATERIAL

Thixotropic Index (0.5/5 rpm)	0.75
Viscosity Brookfield CP51, 5 rpm @ 25°C, mPa·s (cP)	13,000
Particle Size, µm:	
Average	≤25
Maximum	≤50
Shelf Life @ -40°C (from date of manufacture), days	365
Work Life @ 25°C, hours	8
Flash Point - See SDS	

TYPICAL CURING PERFORMANCE

Cure Schedule

15 minute ramp to 165°C + 30 minutes @ 165°C

Alternate Cure Schedule

3 hours @ 125°C

Substrate Temperature

80°C (70°C - 90°C)

Weight Loss on Cure

Weight Loss on Cure, %	0.8

The above cure profiles are guideline recommendations. 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

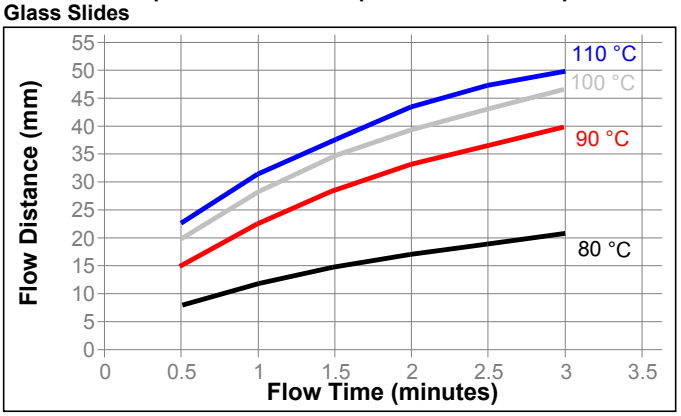
Physical Properties :

Coefficient of Thermal Expansion TMA:		
Below Tg, ppm/°C		28
Above Tg, ppm/°C		83
Glass Transition Temperature (Tg) by TMA, °C		≥130
Bulk Thermal Conductivity, W/(m-K)		0.6
Flexural Modulus, DMTA, <5mm thick sample:		
@ 25 °C	N/mm² (psi)	10,700 (1,551,904)
@ 150 °C	N/mm² (psi)	7,900 (1,145,798)
Extractable Ionic Content, ppm:		
Chloride (Cl-)		≤15
Sodium (Na+)		≤15
Potassium (K+)		≤15
Weight Loss @ 300ºC, %		1.4

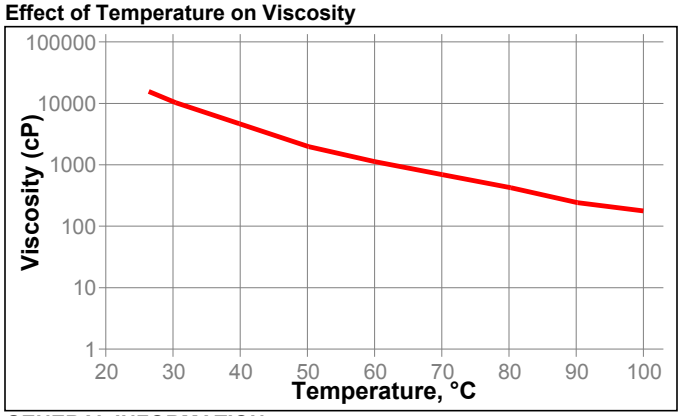
TYPICAL PERFORMANCE OF CURED MATERIAL

Lap Shear Strength, :	
1 hour @ 65°C, psi	3,900
24 hours @ 25°C, psi	2,700

Effect on Temperature on Flow Speed for 13 mil Gap Between Glass Slides



Effect of Temperature on Viscosity



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 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 adhesive 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.
4. Prebaking organic substrates is recommended due to possible outgassing and voiding during cure. A typical prebake profile of 4 hours @ 125ºC.
5. The underfill volume depends on several factors, including die size, gap height, bump density and fillet height. Dispense pattern will primarily depend on bump pattern and die size. Dispensing optimization may be necessary in order to produce void-free parts. A 75% line (single or double) centered along the die size is generally recommended.
6. Minimal delay time between passes is recommended (0 to 20 seconds).

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 °C. Storage below minus (-)40 °C or greater than minus (-)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 Technical Service Center or Customer Service Representative.

Disclaimer

Note:

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Reference 1