Technical Data Sheet

LOCTITE ECCOBOND LCM 1000AF

July 2020

PRODUCT DESCRIPTION

LOCTITE ECCOBOND LCM 1000AF provides the following product characteristics:

Technology	Epoxy
Appearance	Black liquid
Cure	Heat cure
Product Benefits	• Ultra-low warpage • Good trench filler • Robust reliability • Non-conductive • Fine filler • Solvent-free formulation
Application	Encapsulation, Semiconductor Encapsulant (SCE)
Typical Package Application(s)	• Liquid compression molding (LCM) for WLP • Overmold for memory /3D TSV • LCM for Fan-in WLP

LOCTITE ECCOBOND LCM 1000AF is formulated for use in liquid compression molding processes. It is engineered to reduce warpage in various advanced wafer level packaging applications.

LOCTITE ECCOBOND LCM 1000AF is designed with good flowability under room temperature and It is compatible for use with liguid compression molding equipment to provide excellent molding quality.

TYPICAL PROPERTIES OF UNCURED MATERIAL

Filler Content, wt %	84
Filler Particle Size, µm:	
Average	3
Maximum	10
Specific Gravity, @ 25ºC, g/cm³	1.92
Viscosity by Rheometer, DHR-2 @ 25 °C, mPa·s (cP):	
@ 5 s^{-1}	814,000
Thixotropic Index, Rheometer DHR-2 @ 25 °C, :	
@ 5 s^{-1}	2.0
Pot Life @ 25ºC, hours	12
Shelf Life @ -40ºC , days	365
Flash Point - See SDS	

TYPICAL CURING PERFORMANCE

Liquid Compression Molding

In-mold-cure (IMC) condition	300 seconds @ 120°C
Post-mold-cure (PMC) condition	1 hour @ 150°C

The above thermal compression profile and post cure condition 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, TMA, 5ºC/min:	
Below Tg, ppm/°C	7
Above Tg, ppm/°C	18
Glass Transition Temperature, TMA, @5ºC/ minute, °C	161
Storage Modulus, 25°C, DMA, @5ºC/ min, GPa	15
Alpha particle emissivity, c/h/cm^2	<0.001

TYPICAL PERFORMANCE OF CURED MATERIAL

Warpage , After PMC (1 hour @ 150°C):	
200 µm thick LCM on 8 inch diameter, 600 µm thick wafer, µm	<35

GENERAL INFORMATION

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

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.

DIRECTIONS FOR USE

1. Ensure all surfaces to be bonded are free from surface contamination.
2. 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

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/F
N/mm x 5.71 = lb/in
psi x 145 = N/mm²
MPa = N/mm²
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. Any liability in respect of the information in the Technical Data Sheet or any other written or oral recommendation(s) regarding the concerned product is excluded, except if otherwise explicitly agreed and except in relation to death or personal injury caused by our negligence and any liability under any applicable mandatory product liability law.

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Reference 1

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Loctite:

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