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LOCTITE

Technical Data Sheet

LOCTITE ECCOBOND FP4802

September 2016

PRODUCT DESCRIPTION

LOCTITE ECCOBOND FP4802 provides the following product characteristics:

Technology	Epoxy
Appearance	Black
Cure	Heat cure
Application	Encapsulating

LOCTITE ECCOBOND FP4802 is a high purity, liquid encapsulant designed for use in applications utilizing lead-free solder. This product can withstand solder reflow temperatures up to 260°C after being exposed to JEDEC level 2 (85°C/60% RH, 168hours) preconditioning. It was formulated to meet "Green" non-halide objectives of many technical users and for temperature cycling ranges up to -65 to 150°C. LOCTITE ECCOBOND FP4802 features excellent flow properties allowing the material to penetrate fine pitch wires and deep cavities without entrapping voids. A cavity or potting dam is required for flow control. LOCTITE ECCOBOND FP4802 is suitable for bare chip protection of a variety of advanced packages, such as Ball Grid Arrays (BGA's), Chip Scale Packages (CSP's), Plastic Ball Grid Arrays (PBGA's), and full arrays on Low Temperature cofired Ceramic (LTCC) .

TYPICAL PROPERTIES OF UNCURED MATERIAL

Viscosity, Brookfield - HBT, 25 °C, cps:	
Spindle 7, speed 10 rpm	80,000
Filler Content, % ash	72
Specific Gravity @ 25ºC	1.76
Pot Life @ 25 °C (time to double viscosity), hours	8
Shelf Life @ -40°C (from date of manufacture), days	274

TYPICAL CURING PERFORMANCE

Gel Time

Gel @ 121ºC, minutes 20

Cure Schedule

60minutes @ 120°C plus 120minutes @ 165°C

Alternative Cure Schedule

30minutes @ 125°C plus 90minutes @ 165°C

Do not cure with a ramp rate >10°C/minute.

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 , ppm/°C:		
alpha 1 (<55°C)		20
alpha 2 (190 to 220°C)		100
Glass Transition Temperature (Tg), °C		50
Extractable Ionic Content @ 121 °C, , ppm:		
Chloride (Cl-)		<5
Sodium (Na+)		<5
Potassium (K+)		<5
Flexural Modulus @ 25 °C, ASTM D790	N/mm² (psi)	13,000 (1,885,490)

TYPICAL PERFORMANCE OF CURED MATERIAL

Miscellaneous

Flexural Strength @ 25°C, ASTM D790	N/mm² (psi)	120 (17,400)

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.

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
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

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