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LOCTITE

Technical Data Sheet

LOCTITE ECCOBOND UF 3800

September 2012

PRODUCT DESCRIPTION

LOCTITE ECCOBOND UF 3800 provides the following product characteristics:

Technology	Epoxy
Appearance	Black liquid
Cure	Heat cure
Product Benefits	• High Tg • Reworkable • One component • Room temperature flow capability • Fast cure at moderate temperatures • Minimal stress on other components • Compatible with most Pb-free and halogen-free solders • Stable electrical performance in temperature humidity bias
Application	Underfill
Typical Package Application	Chip scale packages and BGA

LOCTITE ECCOBOND UF 3800 reworkable epoxy underfill is designed for CSP and BGA applications. It cures quickly at moderate temperatures to minimize stress to other components, and when cured provides excellent mechanical stress protection for solder joints.

TYPICAL PROPERTIES OF UNCURED MATERIAL

Viscosity, Physica MCR100 @ 25°C, mPa·s (cP):	
Spindle CP50-1, Shear Rate 100s^{-1}	375
Specific Gravity	1.13
Pot Life @ 25ºC, days	3
Shelf Life @ -20°C, days	274
Flash Point - See SDS	

TYPICAL CURING PERFORMANCE

Cure Schedule

≥8 minutes @ 130°C

The above cure schedules represent actual bondline/material temperatures.

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 ppm/°C:	
Below Tg, ppm/°C	52
Above Tg, ppm/°C	188
Glass Transition Temperature (Tg) by TMA, °C	69
Storage Modulus, 25°C, GPa	3.08
Electrical Properties:	
Dielectric Constant @ 23ºC :	
@ 1GHz	2.97
@ 2GHz	2.8
Dissipation Factor @ 23ºC:	
@ 1GHz	0.0174
@ 2GHz	0.0022

GENERAL INFORMATION

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

Rework Procedure

1. Heat part to 240°C or greater using a hot air nozzle on standard BGA rework equipment.
2. The component can then be twisted and removed.
3. Residue can be removed by using a tacky or liquid flux with a soldering iron.

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: -25 to -15°C. Storage below -25°C or greater than -15°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.

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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

Disclaimer
Note:
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