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LOCTITE

Technical Data Sheet

LOCTITE ECCOBOND FP4655

December 2016

PRODUCT DESCRIPTION

LOCTITE ECCOBOND FP4655 provides the following product characteristics:

Technology	Epoxy
Appearance	Black
Cure	Heat cure
Product Benefits	• High purity • Self-leveling • Low stress • Low viscosity
Application	Encapsulant
Typical Applications	Cavity fill or dam and fill

LOCTITE ECCOBOND FP4655 is a high performance encapsulant which can be used alone as a cavity fill material, or in combination with FP4451 material as part of a dam and fill system. LOCTITE ECCOBOND FP4655 is based on the same chemistry as the FP4451 and, therefore, is completely compatible with that product. Its low viscosity and fine particle filler size make it ideal for devices with fine pitch wire spacing. Dam and fill materials should be co-cured to obtain best results.

TYPICAL PROPERTIES OF UNCURED MATERIAL

Viscosity, Brookfield - RVF, 25 °C, mPa·s (cP):	
Spindle 7,, speed 10 rpm	140,000
Specific Gravity	1.88
Filler Loading, %	81
Pot life@ 25°C, hours:	
(Time required to double viscosity)	11
Gel Time @ 121 °C, minutes	11
Shelf Life @ -40°C, months	9
Flash Point - See SDS	

TYPICAL CURING PERFORMANCE Recommended Cure Schedule

15 minutes @ 110°C plus 30 minutes @ 165°C

Alternate Cure Schedule

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

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 from Shenglan Zeng

Physical Properties :

Coefficient of Thermal Expansion ppm/°C:	
Below Tg (40 to 120°C)	12
Above Tg (190 to 220°C)	60
Glass Transition Temperature (Tg), °C	150
Extractable Ionic Content, ppm:	
Chloride (Cl-)	<15
Sodium (Na+)	<10
Potassium (K+)	<15

Electrical Properties:

Volume Resistivity, ohm-cm	$\geq 5\times10^{13}$

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.

THAWING:

1. Frozen packages must be completely thawed before use.
2. Store tip down and warm at room temperature until no longer cool to the touch (normally 60 to 90 minutes).
3. DO NOT thaw in an oven.

Directions for use

1. A positive displacement pump is recommended for reproducible shot sizes.
2. A needle size gauge should be used.
3. For best results, dispense onto substrate warmed to 75°C.
4. Care should be taken to protect syringe material from excessive heat prior to dispense.
5. Once dispensed, material should be cured within 30 minutes to prevent moisture contamination.
6. The cured properties of moisture contaminated material will be poorer than those described.
7. **NOTE:** Elevated temperatures reduce working life.

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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

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.
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