Technical Data Sheet

# LOCTITE ECCOBOND 50300-1

December 2016

## PRODUCT DESCRIPTION

LOCTITE ECCOBOND 50300-1 provides the following product characteristics:

| | |
|---|---|
| **Technology** | Epoxy |
| Appearance | Black |
| Product Benefits | • One component<br>• Low viscosity<br>• Low CTE |
| Filler content by weight, % | 70 |
| Percent Solids by Weight | 100 |
| **Cure** | Heat Cure |
| **Application** | Encapsulant - glob top |

LOCTITE ECCOBOND 50300-1 glob top is designed for encapsulating wire bonded bare die on epoxy laminate and similar substates. The formulation of this single component material ensures a long pot and a very stable viscosity during use. It is recommended for use on ICs with high wire profiles and in applications where the spreading of the glob top during cure must be controlled.

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## TYPICAL PROPERTIES OF UNCURED MATERIAL

| | |
|---|---|
| Viscosity, Brookfield Sp #6, 25 °C, mPa·s (cP): | |
| Speed 2.5 rpm | 100 |
| Speed 20 rpm | 40 |
| Density, g/cm³ | 1.75 |
| Pot life , : | |
| @ 18 to 25ºC, days | 7 |
| @ 40ºC, days | 5 |
| Shelf Life @ -40 to 0°C (from date of manufacture), days | 122 |
| Flash Point - See SDS | |

## TYPICAL CURING PERFORMANCE

**Recommended Cure Schedule**

2 hours @ 150°C

**Low Stress Cure Schedule**

1 hour @ 120°C + 1 hour @ 150°C

For best results, substrate should be preheated (up to a maximum of 70ºC) to obtain the optimum flow under and around the wires.

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** : | |
| Hardness, Shore D | 95 |
| Coefficient of Linear Thermal Expansion, $10^{-6}$ $K^{-1}$ | 20 |
| Glass Transition Temperature, °C | 140 |
| Shrinkage on Cure | |
| On Cure, % | 0.5 |
| With Pre-cure of1hour @ 120°C, % | 0.2 |
| : | |
| On Cure, % | 0.5 |
| With Pre-cure of1hour @ 120°C, % | 0.2 |
| Thermal Conductivity, W/(m-K) | 0.63 |
| Extractable Ionic Content, ppm: | |
| Chloride (Cl-) | 10 |
| Sodium (Na+) | 10 |
| Potassium (K+) | 10 |
| Ammonium (NH4+) | 10 |
| Water Absorption, by weight, % | 0.4 |
| **Electrical Properties**: | |
| Dielectric Constant / Dissipation Factor @ 25ºC: | |
| 1kHz | 3.2 / 0.009 |
| Volume Resistivity, Ω·cm | $3.3\times10^{14}$ |

## GENERAL INFORMATION

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

## THAWING:

1. This adhesive is packed and shipped in dry ice.
2. Transfer the syringes from the shipping container to a <0°C freezer without ANY delays.
3. Allow material to reach room temperature before use.

## DIRECTIONS FOR USE

1. LOCTITE ECCOBOND 50300-1 can be used on both manual and automatic dispensing equipment.
2. The surfaces on which the adhesive has to be applied should be clean, dry and free from all dust.
3. Packages removed from storage must be allowed to return to ambient temperature before use. This normally takes 2hours for a 40gram syringeand8 to 12hours for a 500gramcartridge.
4. LOCTITE ECCOBOND 50300-1 is manufactured to a very narrow specifications and is specially processed to avoid the inclusion of air in the material.

**STORAGE:**
Store product in the unopened container in a dry location. Storage information may be indicated on the product container labeling.

**Optimal Storage : -40 to 0 °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.

**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.

**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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Reference 1



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