

# LOCTITE ECCOBOND FP 5201

September 2012

## PRODUCT DESCRIPTION

LOCTITE ECCOBOND FP 5201 provides the following product characteristics:

<b>Technology</b>	BMI/Acrylate
<b>Components</b>	One-component
<b>Product Benefits</b>	<ul style="list-style-type: none"> <li>• High purity</li> <li>• Non-conductive</li> <li>• Excellent protection of electrical joints</li> <li>• Compatible with small assembly gap and tight pitches</li> </ul>
<b>Cure</b>	Heat cure
<b>Application</b>	Underfill
<b>Metal Interconnect</b>	Gold, Solder and Cu pillar
<b>Substrates</b>	Solder, Gold and Cu pads on fine pitch laminate

LOCTITE ECCOBOND FP 5201 is designed for thermal compression bonding processes in flip chip to laminate assembly.

## TYPICAL PROPERTIES OF UNCURED MATERIAL

Viscosity @ 25 °C, mPa·s (cP):

Speed 5 rpm	21,000
Thixotropic Index	3.5
Specific Gravity	1.6
Pot life @ 23°C, days	2
Shelf Life @ -20°C, days	365

Flash Point - See SDS

## TYPICAL CURING PERFORMANCE

### Thermal Compression Bonder (TCB) Cure:

2, 3, and 4 seconds @ 240 to 280°C

### Oven Cure

30 minutes @ 165°C

**NOTE:** TCB cure can be followed by the oven cure if needed.

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.

## DIFFERENTIAL SCANNING CALORIMETRY

Exotherm onset, °C	125
Peak Temperature, °C	134

## TYPICAL PROPERTIES OF CURED MATERIAL

### Physical Properties :

Coefficient of Thermal Expansion , ppm/°C:

Below Tg	31
Above Tg	65
Glass Transition Temperature (Tg) by TMA, °C	171
Extractable Ionic Content, ppm:	
Sodium (Na+)	<5
Potassium (K+)	<5
Chloride (Cl-)	<5
Fluoride (F-)	<5
DMA Modulus @ 25°C, GPa	5.8
Cure energy, J/g	187

## GENERAL INFORMATION

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

**This product is not recommended for use in pure oxygen and/or oxygen rich systems and should not be selected as a sealant for chlorine or other strong oxidizing materials.**

### 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. Allow container to reach room temperature before use.

### Storage

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

**Optimal Storage: -20°C. Storage below -20°C or above -20°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.

**Conversions**

$(^{\circ}\text{C} \times 1.8) + 32 = ^{\circ}\text{F}$   
 $\text{kV/mm} \times 25.4 = \text{V/mil}$   
 $\text{mm} / 25.4 = \text{inches}$   
 $\text{N} \times 0.225 = \text{lb}$   
 $\text{N/mm} \times 5.71 = \text{lb/in}$   
 $\text{psi} \times 145 = \text{N/mm}^2$   
 $\text{MPa} = \text{N/mm}^2$   
 $\text{N}\cdot\text{m} \times 8.851 = \text{lb}\cdot\text{in}$   
 $\text{N}\cdot\text{m} \times 0.738 = \text{lb}\cdot\text{ft}$   
 $\text{N}\cdot\text{mm} \times 0.142 = \text{oz}\cdot\text{in}$   
 $\text{mPa}\cdot\text{s} = \text{cP}$

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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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