

LOCTITE ECCOBOND FP 5201

September 2012

PRODUCT DESCRIPTION

LOCTITE ECCOBOND FP 5201 provides the following product characteristics:

Technology	BMI/Acrylate
Components	One-component
Product Benefits	• High purity • Non-conductive • Excellent protection of electrical joints • Compatible with small assembly gap and tight pitches
Cure	Heat cure
Application	Underfill
Metal Interconnect	Gold, Solder and Cu pillar
Substrates	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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