

LOCTITE[®] ECCOBOND FP 4535

April 2023

PRODUCT DESCRIPTION

LOCTITE[®] ECCOBOND FP 4535 provides the following product characteristics:

Technology	Epoxy
Appearance	Black liquid
Product Benefits	<ul style="list-style-type: none"> • Fast cure • One component • High Ti • Non-moisture sensitive • Green product • Stable electrical performance under standard Surface Insulation Resistance (SIR)
Cure	Heat cure
Application	Assembly, Encapsulation
Filler Type	Fumed silica
Filler Weight, %	65
Operating Temperature	25 °C
Typical Package Application(s)	Edgebond
Key Substrates	PCB

LOCTITE[®] ECCOBOND FP 4535 is formulated for big chips to enhance the reliability performance. It provides a uniform and void-free encapsulant edgebond, maximizing the device's temperature cycling capability, distributing stress away from solder connects.

TYPICAL PROPERTIES OF UNCURED MATERIAL

Viscosity, Rheometer, @ 25°C, Pa.s:	
Spindle 2, speed 20 rpm	155.6
Thixotropic Index (2/20 rpm)	5.0
Specific Gravity, g/cm ³	1.72
Shelf Life @ -20°C (from date of manufacture), days	180
Work Life @ 25°C, days:	
Viscosity, in syringe	1
Flash Point - See SDS	

TYPICAL CURING PERFORMANCE

Cure Schedule

- 20 minutes @ 125°C
- 7 minutes @ 150°C

The above cure profile is a guideline recommendation. These cure conditions (time and temperature) may vary based on customers' experience and specific 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	19
Above Tg	81
Glass Transition Temperature, °C	147
Storage Modulus, 25°C, DMA, MPa	8,700

Electrical Properties

Surface Insulation Resistance 85°C/85% RH, h:	
0.3 pitch, no dendrite observed	>1,000

TYPICAL PERFORMANCE OF CURED MATERIAL

Shear Strength

Die Shear Strength, kg	51
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GENERAL INFORMATION

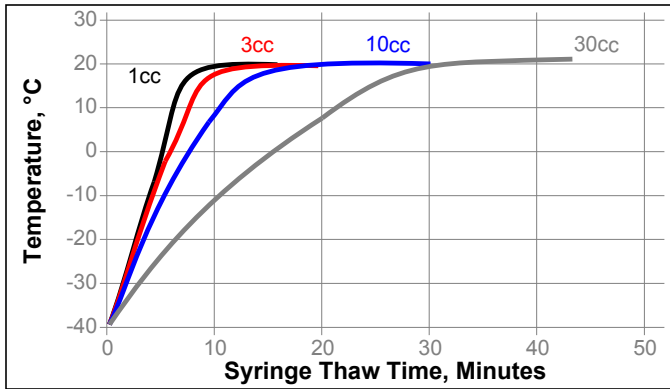
For safe handling information on this product, consult the Safety Data Sheet, (SDS).

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. Allow container to reach room temperature before use.
2. After removing from the freezer, set the syringes to stand vertically while thawing.
3. DO NOT open the container before contents reach 25 °C temperature. Any moisture that collects on the thawed container should be removed prior to opening the container.
4. DO NOT re-freeze. Once thawed, the adhesive should not be re-frozen.



DIRECTIONS FOR USE

1. Thawed material should immediately be placed on dispense equipment for use.
2. If the adhesive is transferred to a final dispensing reservoir, care must be exercised to avoid entrapment of contaminants and/or air into the adhesive.
3. Adhesive must be completely used within the product's recommended work life.
4. Alternate dispense amounts may be used depending on the application requirements.
5. Star or crossed shaped dispense patterns will yield fewer bondline voids than the matrix style of dispense pattern.

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

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 Henkel Representative.

Conversions

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

Disclaimer

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