

LOCTITE ECCOBOND EO1016

April 2023

PRODUCT DESCRIPTION

LOCTITE ECCOBOND EO1016 provides the following product characteristics:

Technology	Epoxy
Appearance (cured)	Black
Product Benefits	<ul style="list-style-type: none"> • Excellent shelf stability • Fast curing • flame-out
Components	One-component
Cure	Heat cure
Application	Encapsulation
Typical Applications	IC's, transistors and similar semiconductors
Flammability Rating	Passes UL 94 V-0

LOCTITE ECCOBOND EO1016 is an epoxy encapsulant intended for applications requiring excellent handling properties. The cured material survives severe thermal shock and offers continuous service to 177 °C. It is particularly suited for use on transistors and similar semiconductors, can be used for encapsulation of watch ICs.

TYPICAL PROPERTIES OF UNCURED MATERIAL

Viscosity, Brookfield - RVF, 25 °C, mPa·s (cP):	
Spindle 6, speed 2 rpm	62,000
Spindle 6, speed 20 rpm	58,000
Thixotropic Index	1.1
Specific Gravity @ 25°C	1.56
Shelf Life:	
@ 4°C, days	365
@ -40°C, days	365
Gel Time @ 121°C, minutes	4.5
Pot life @ 25°C, days	91
Flash Point - See SDS	

TYPICAL CURING PERFORMANCE Recommended Cure Schedule

20 minutes @ 150°C

Alternate Cure Schedule

24 hours @ 93°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.

Differential Scanning Calorimetry

Initial Temperature, °C	122
Peak Temperature, °C	138
Energy to break point, Joules	0.414

TYPICAL PROPERTIES OF CURED MATERIAL

Physical Properties:

Coefficient of Linear Thermal Expansion, ppm/°C:	
Below Tg	46
Above Tg	140
Glass Transition Temperature, °C	126
Coefficient of Thermal Conductivity, W/(m·K)	0.39
Tensile Strength	N/mm ² 55.17 (psi) (8,000)
Flexural Modulus	N/mm ² 5,880 (psi) (852,600)
Flexural strength	N/mm ² 100 (psi) (14,500)

Adhesion, psi	3,660
Cohesive	
Al-Al Tensile shear	
Elongation, %	1.8
Shore Hardness, Durometer D	≥86
Linear Shrinkage, 10 grams, %	1.7
Moisture Absorption, %:	
24 hours immersion @ 25°C	0.06
24 hours immersion @ 50°C	0.23

Electrical Properties:

Dielectric Constant / Dissipation Factor, IEC 60250:	
@ 25 °C:	
1kHz	4.3 / 0.0084
Arc Resistance, ASTM D495,	180
Volume Resistivity, IEC 60093, Ohm-cm	6×10 ¹⁵
Surface Resistivity, IEC 60093, Ohm-cm	1×10 ¹⁶

GENERAL INFORMATION

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

Directions for use

1. Mix thoroughly each time it is used.
2. Heating to 32 to 43°C will lower viscosity and aid in mixing and pouring.

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 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

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. Any liability in respect of the information in the Technical Data Sheet or any other written or oral recommendation(s) regarding the concerned product is excluded, except if otherwise explicitly agreed and except in relation to death or personal injury caused by our negligence and any liability under any applicable mandatory product liability law.

In case products are delivered by Henkel Belgium NV, Henkel Electronic Materials NV, Henkel Nederland BV, Henkel Technologies France SAS and Henkel France SA please additionally note the following:

In case Henkel would be nevertheless held liable, on whatever legal ground, Henkel's liability will in no event exceed the amount of the concerned delivery.

In case products are delivered by Henkel Colombiana, S.A.S. the following disclaimer is applicable:

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. 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.

Any liability in respect of the information in the Technical Data Sheet or any other written or oral recommendation(s) regarding the concerned product is excluded, except if otherwise explicitly agreed and except in relation to death or personal injury caused by our negligence and any liability under any applicable mandatory product liability law.

In case products are delivered by Henkel Corporation, or Henkel Canada Corporation, the following disclaimer is applicable:

The data contained herein are furnished for information only and are believed to be reliable. We cannot assume responsibility for the results obtained by others over whose methods we have no control. It is the user's responsibility to determine suitability for the user's purpose of any production methods mentioned herein and to adopt such precautions as may be advisable for the protection of property and of persons against any hazards that may be involved in the handling and use thereof. In light of the foregoing, **Henkel Corporation specifically disclaims all warranties expressed or implied, including warranties of merchantability or fitness for a particular purpose, arising from sale or use of Henkel Corporation's products. Henkel Corporation specifically disclaims any liability for consequential or incidental damages of any kind, including lost profits.** The discussion herein of various processes or compositions is not to be interpreted as representation that they are free from domination of patents owned by others or as a license under any Henkel Corporation patents that may cover such processes or compositions. We recommend that each prospective user test his proposed application before repetitive use, using this data as a guide. This product may be covered by one or more United States or foreign patents or patent applications.

Trademark usage

Except as otherwise noted, all trademarks in this document are trademarks of Henkel Corporation in the U.S. and elsewhere. ® denotes a trademark registered in the U.S. Patent and Trademark Office.

Reference 2