



# BERGQUIST BOND PLY TBP 850

Known as BERGQUIST BOND-PLY 100  
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## PRODUCT DESCRIPTION

Silicone-Free Formulation, High Performance Thermally Conductive Material.

<b>Technology</b>	Acrylic
Appearance	White
Reinforcement Carrier	Fiberglass
Total Thickness	0.14 mm
<b>Application</b>	Thermal management, Thermally conductive adhesive
Operating Temperature Range	-30 to 120°C

## FEATURES AND BENEFITS

- Designed to replace mechanical fasteners or screws
- For applications that require electrical isolation
- Double-sided, pressure sensitive adhesive tape

## TYPICAL APPLICATIONS

- Mount heat sink onto BGA graphic processor or drive processor
- Mount heat spreader onto power converter PCB or onto motor control PCB

## SHELF LIFE

The double-sided, pressure sensitive adhesive used in LOCTITE BERGQUIST BOND PLY® products requires the use of dual liners to protect the surfaces from contaminants.

The recommended shelf life for BERGQUIST BOND PLY TBP 850 is 6 months at a maximum continuous storage temperature of 35°C or 3-months at a maximum continuous storage temperature of 45°C, for maintenance of controlled adhesion to the liner.

The shelf life of the Bond Ply material, without consideration of liner adhesion (which is often not critical for manual assembly processing), is recommended at 12 months from date of manufacture at a maximum continuous storage temperature of 60°C.

## TYPICAL PROPERTIES

### Physical Properties

Temperature Coefficient of Resistance, °C	200
Elongation , 45° to wrap and fill, ASTM D412,%	70
Tensile Strength, ASTM D412, MPa	6

Coefficient of Thermal Expansion, ASTM D 3386, ppm	325
Glass Transition Temperature, ASTM D1356, °C	-30
Flammability Rating, UL 94	V-0

## Adhesion Properties

Lap Shear Strength, ASTM D1002: @ 25°C	N/mm <sup>2</sup> 0.7 (psi) (100)
After 5 hours @ 100°C	N/mm <sup>2</sup> 1.4 (psi) (200)
After 2 minutes @ 200°C	N/mm <sup>2</sup> 1.4 (psi) (200)

Static Dead Weight Shear Strength, PSTC#7, °C 150

## Electrical Properties

Dielectric Breakdown Voltage , ASTM D149: @ 0.005" (Vac)	3,000
@ 0.008" (Vac)	6,000
@ 0.011" (Vac)	8,500

## Thermal Properties

Thermal Conductivity , ASTM D5470, W/(m-K) 0.8

## Thermal Impedance vs. Pressure

TO-220 Thermal Performance, °C/W:	
@ 0.005":	
@ 10 psi	5.17
@ 25 psi	4.87
@ 50 psi	4.49
@ 100 psi	4.18
@ 200 psi	4.1
@ 0.008":	
@ 10 psi	5.4
@ 25 psi	5.35
@ 50 psi	5.28
@ 100 psi	5.22
@ 200 psi	5.2
@ 0.011":	
@ 10 psi	6.59
@ 25 psi	6.51
@ 50 psi	6.51
@ 100 psi	6.5
@ 200 psi	6.4



Thermal Impedance, ASTM D5470, °C-in<sup>2</sup>/W <sup>(1)</sup>:

@ 0.005":	
@ 10 psi	0.56
@ 25 psi	0.54
@ 50 psi	0.52
@ 100 psi	0.5
@ 200 psi	0.5
@ 0.008":	
@ 10 psi	0.82
@ 25 psi	0.8
@ 50 psi	0.78
@ 100 psi	0.77
@ 200 psi	0.75
@ 0.011":	
@ 10 psi	1.03
@ 25 psi	1.02
@ 50 psi	1.01
@ 100 psi	1.0
@ 200 psi	0.99

<sup>1)</sup> The ASTM D5470 test fixture was used. The recorded value includes interfacial thermal resistance. These values are provided for reference only. Actual application performance is directly related to the surface roughness, flatness and pressure applied.

## 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.

## CONFIGURATIONS AVAILABLE

BERGQUIST BOND PLY TBP 850 are supplied in:

- Sheet form
- Roll form
- Die-Cut parts

## Conversions

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

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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. Any liability in respect of the information in the Technical Data Sheet or any other

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Reference 2

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