Technical Data Sheet

BERGQUIST SIL PAD TSP PPK1300

Known as BERGQUIST POLY-PAD K-10
September 2019

PRODUCT DESCRIPTION

Polyester-Based, Thermally Conductive Insulation Material.

Technology	Polyester-based
Appearance	Yellow
Reinforcement Carrier	Polyimide
Total Thickness , ASTM D374	0.152 mm
Application	Thermal management, Thermally conductive adhesive
Maximum Operating Temperature	-20 to 150ºC

FEATURES AND BENEFITS

- Thermal impedance: 0.6°C.in² /W @ 50 psi
- Polyester based
- For applications requiring non-silicone conformal coatings
- Designed for silicone-sensitive standard applications
- Excellent dielectric strength and thermal performance

TYPICAL APPLICATIONS

- Power supplies
- Motor controls
- Power semiconductors

BERGQUIST SIL PAD TSP PPK1300 is a composite of film coated with a polyester resin. The material offers superior thermal performance for your most critical applications with a thermal resistance of 0.2°C-in2/W as well as excellent dielectric strength. Polyester-based, thermally conductive insulators from Bergquist provide a complete family of materials for silicone-sensitive applications. Poly-Pads are ideally suited for applications requiring conformal coatings or applications where silicone contamination is a concern (telecomm and certain aerospace applications). Poly-Pads are constructed with ceramic-filled polyester resins coating either side of a fiberglass carrier or a film carrier. The Poly-Pad® family offers a complete range of performance characteristics to match individual applications.

TYPICAL PROPERTIES

Physical Properties

Hardness, Shore A	90
Breaking Strength, ASTM D1458, KN/m	5
Elongation, ASTM D412, %	40
Flammability, UL 94	V-0
Tensile Strength, ASTM D412	Mpa 34 (psi) (5,000)

Electrical Properties

Dielectric Breakdown Voltage , ASTM D149, VAC	6,000
Volume Resistivity, ASTM D257, ohm-meter	1×10^{12}
Dielectric Constant	

Thermal Properties

Thermal Conductivity , ASTM D5470, W/(m-K) [1]	1.3

Thermal Performance vs. Pressure

TO-220 Thermal Performance, ºC/W:	
@ 10 psi	3.76
@ 25 psi	3.35
@ 50 psi	2.75
@ 100 psi	2.3
@ 200 psi	2.03
Thermal Impedance, ºC-in²/W:	
@ 10 psi	1.04
@ 25 psi	0.8
@ 50 psi	0.6
@ 100 psi	0.43
@ 200 psi	0.3

[1]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).

CONFIGURATIONS AVAILABLE

- Sheet form, die-cut parts and roll form
- With or without pressure-sensitive adhesive

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.

Conversions

(°C x 1.8) + 32 = °F
kV/mm x 25.4 = V/mil
mm / 25.4 = inches
N x 0.225 = lb/F
N/mm x 5.71 = lb/in
psi x 145 = N/mm²
MPa = N/mm²
N·m x 8.851 = lb·in
N·m x 0.738 = lb·ft
N·mm x 0.142 = oz·in
mPa·s = cP

Disclaimer

Note:
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, Resin Technology Group, Inc., 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 and/or registered trademarks of Henkel and its affiliates in the U.S. and elsewhere.

Reference 3