

# GAP PAD TGP HC 5000

Known as GAP PAD HC 5.0  
November 2018

## PRODUCT DESCRIPTION

Highly Conformable, Thermally Conductive, Low Modulus Material.

|                                |   |
|--------------------------------|---|
| Technology                     | Silicone  |
| *Appearance                    | Grey  |
| Reinforcement Carrier          | Fibreglass  |
| Thickness<br>ASTM D374         | *0.508, 1.016, 1.524,<br>2.032, 2.540, 3.175            |
| Inherent Surface Tack          | 2   |
| <b>Application</b>             | Thermal management,<br>TIM (Thermal Interface Material) |
| Operating Temperature<br>Range | -60 to 200°C  |

\*Custom thicknesses available. Please contact your Henkel Sales Representative for more information.

## FEATURES AND BENEFITS

- Thermal Conductivity: 5.0 W/m-K
- High-compliance, low compression stress
- Fibreglass reinforced for shear and tear resistance

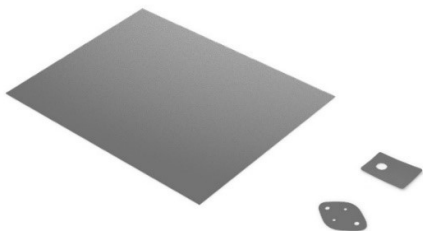
GAP PAD TGP HC 5000 is a soft and compliant gap filling material with a thermal conductivity of 5.0 W/m-K. The material offers exceptional thermal performance at low pressures due to a unique filler package and low-modulus resin formulation. The enhanced material is ideal for applications requiring low stress on components and boards during assembly.

GAP PAD TGP HC 5000 maintains a conformable nature that allows excellent interfacing and wet-out characteristics, even to surfaces with high roughness and/or topography.

GAP PAD TGP HC 5000 is offered with natural inherent tack on both sides of the material, eliminating the need for thermally-impeding adhesive layers. The top side has minimal tack for ease of handling.

GAP PAD TGP HC 5000 is supplied with protective liners on both sides.

\*The product appearance was violet until 06-05-2022.



## TYPICAL APPLICATIONS

- Telecommunications
- ASICs and DSPs
- Consumer electronics
- Thermal modules to heat sinks

## TYPICAL PROPERTIES OF CURED MATERIAL

### Physical Properties

|  |                         |
|--|-------------------------|
| Hardness, Shore 00, Thirty second delay value, ASTM D2240, Bulk rubber | 35                      |
| Heat Capacity, ASTM E1269, J/g-K                                       | 1.0                     |
| Density, Bulk rubber, ASTM D792, g/cc                                  | 3.2                     |
| Flammability, UL 94  | V-0                     |
| Young's Modulus, ASTM D575 <sup>(1)</sup>                              | kPa 121<br>(psi) (17.5) |

### Electrical Properties

|  |                    |
|--|--------------------|
| Dielectric Breakdown Voltage, ASTM D149, Minimum value @ 20 mil, VAC | 5,000              |
| Dielectric Constant, ASTM D150, 1,000Hz                              | 8.0                |
| Volume Resistivity, ASTM D257, ohm-meter                             | 1×10 <sup>10</sup> |

### Thermal Properties

|  |      |
|--|------|
| Thermal Conductivity, ASTM D5470, W/(m-K)                                      | 5.0  |
| Thermal Impedance, 0.040" <sup>(2)</sup><br>ASTM D5470, °C-in <sup>2</sup> /W: |      |
| 10% Deflection   | 0.35 |
| 20% Deflection   | 0.3  |
| 30% Deflection   | 0.26 |

(1) Young's Modulus, calculated using 0.01 in/min. step rate of strain with a sample size of 0.79 inch<sup>2</sup> after 5 minutes of compression at 10% strain on a 1mm thickness material

(2) The ASTM D5470 test fixture was utilized. The recorded values include the interfacial thermal resistance. The 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 HITEK Electronic Materials for assistance and recommendations on specifications for this product.

## CONFIGURATIONS AVAILABLE

GAP PAD TGP HC 5000 is available in the following configurations:

- Sheet form and die-cut parts

**STORAGE**

Store product in the unopened container in a dry location. Storage information may be indicated on the product container labeling.

Optimal Storage: 25°C (±3), 50% RH (±10) for a 12 months shelf life. 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**

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

**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 1

|   |   |   |
|---|---|---|
| <p>Supplied by:<br/> <a href="http://www.hitek-ltd.co.uk">www.hitek-ltd.co.uk</a><br/> +44 (0)1724 851678</p> |  | <p><b>HITEK</b><br/> ELECTRONIC MATERIALS LTD</p> |
|---|---|---|