

**KERATHERM<sup>®</sup>**

Special Films and Services

**Spaceform<sup>®</sup>**

**Adhesive Film  
“Gluey-Soft”**

**Dispensing Technology**

**Tape Development &  
Produktion**

**KERAFOL<sup>®</sup>**

KERAMISCHE FOLIEN GMBH

**Innovation in Technology and Environmental Protection**

## Keratherm® - Spaceform® highly filled, mouldable silicone compound

### Applications:

- Mechanical engineering
- PCB-housings
- “Heat Pipe” applications
- Computer units



| Properties                       | Units  | Spaceform® Q<br>non-curing | Spaceform® R<br>non-curing |
|----------------------------------|--|----------------------------|----------------------------|
| Colour                           |  | brown                      | grey-green                 |
| Thermal resistance $R_{th}$      | K/W  | 1.80*                      | 0.56*                      |
| Thermal impedance                | $^{\circ}\text{Cmm}^2/\text{W}$<br>$\text{Kin}^2/\text{W}$ | 529<br>0.83                | 164<br>0.26                |
| Thermal conductivity $\lambda$   | W/mK   | 1.4                        | 2.25                       |
| Breakdown voltage $U_{d; ac}$    | kV   | 4.0                        | 8.0                        |
| Dielectric breakdown $E_{d; ac}$ | KV/mm  | 4.0                        | 8.0                        |
| Thickness (+/-10%) *             | mm   | 0.5                        | 0.5                        |
| Hardness (after curing)          | Shore 00   | 30 - 40                    | 70 - 80                    |
| Youngs Modulus                   | N/cm <sup>2</sup>  | 97                         | 82                         |
| Density                          | g/cm <sup>3</sup>  | 2.38                       | 2.38                       |
| Application temperature          | $^{\circ}\text{C}$   | -40 to +180                | -40 to +180                |
| TML                              | Ma. %  | 0.22                       | 0.20                       |
| Tempering needed                 |  | no                         | no                         |

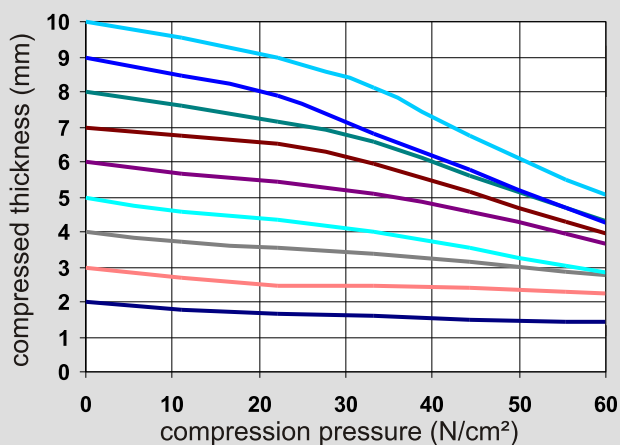
\* Measured thickness 0.5 mm

\*\* Youngs modulus sample size 30mm x 2.5mm;  
variable contact pressure; compression 50% of the measured thickness

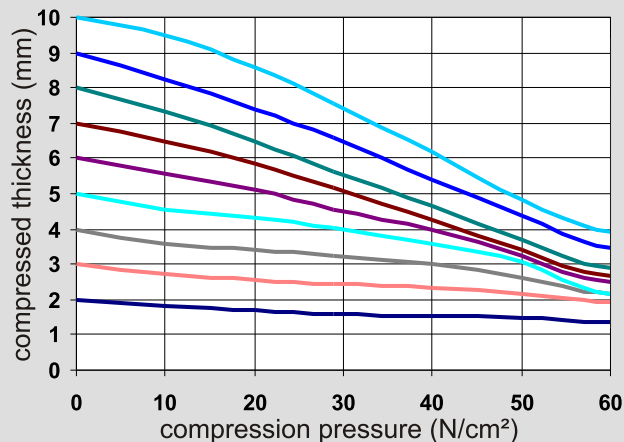
**Following thicknesses are available: 2.0 mm - 10.0 mm**

Spaceform® Q and R are non-curing moulding compounds for individual thermal solutions. Spaceform® is a highly filled, mouldable silicone compound that is applied by the customer and possesses exceptional mechanical, electrical and thermal properties. Thanks to its excellent ability to conform to any shape or size, there are no restrictions in dimensions or shapability. Spaceform® Q and R are characterized by their exceptional flexibility, easy handling and recyclability.

**Compressibilities of Spaceform® Q**



**Compressibilities of Spaceform® R**



### Advantages of Spaceform®:

- spotted heat dissipation
- extremely good compressibility
- excellent plasticity
- good thermal properties
- good electrical properties
- good dielectrical properties

## Keratherm® - Gluey-Soft 100 Adhesive Pad

### Versatile applications:

- non-slip mat for car interior
- fit-up aid
- adhesive surface for notes or small parts e.g. on the refrigerator
- protection and mounting of delicate products
- vibration attenuation and acoustic insulation

### Technical properties:

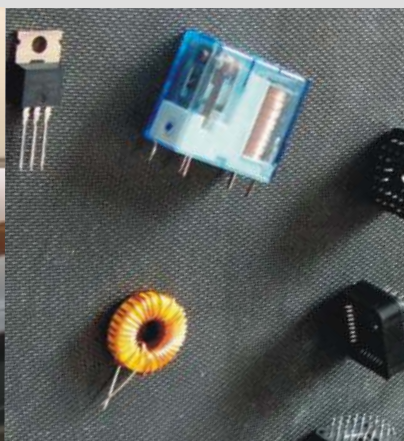
- residue-free removable
- electrical insulating
- high dielectric breakdown
- punchable and cuttable
- application temperature: -40 to +150°C

| Properties                                       |        | Unit     | Gluey Soft  |
|--|--------|----------|-------------|
| Colour   |        |          | grey        |
| Thickness (+/-10%)                               |        | mm       | 1.2         |
| Reinforcement                                    |        |          | fiber glass |
| Hardness   |        | Shore 00 | 45          |
| Peel strength                                    | Side A | N        | 2           |
|  | Side B | N        | 1           |
| Peeling 180°C;<br>peeling speed 300mm/min.       |        |          |             |
| Adhesive strength<br>(25x25 mm adhesive surface) |        | kPa      | 300         |
| Bonding strength *                               |        | N x mm   | > 1.4       |
| Adhesive strength on surface *                   |        | mm       | > 1.0       |
| Dielectric breakdown $E_{d,ac}$                  |        | KV/mm    | > 20        |
| Thermal conductivity $\lambda$                   |        | W/mK     | 0.25        |
| TML  |        | Ma.-%    | < 0.8       |
| Elongation                                       |        | %        | 40          |
| Application temperature                          |        | °C       | -40 to +150 |

\* Texture Analyser



Non-slip mat for car interior



fit-up aid



vibration attenuation and fixation e.g. for external hard discs

This adhesive film with reinforcement made of fiberglass fixes parts on all smooth and slightly rough surfaces, even in extreme angled positions or perpendicular to walls - almost "magnetically"! Optimal fixation of components for repairs, installation assistance, anti-slip mat for mobile phones, sunglasses in the car, adhesive surface for notes or small parts on the refrigerator etc. The non-toxic film guarantees the best adhesion without containing adhesives and has an extremely long life. In addition, it can be used in a very large temperature range.

The adhesive strength depends on the material, position and weight. The film can be cleaned with tap water if needed.

## Kerafol® - Dispensing Technology as a Service



### Consulting, Development and Production

With our knowledge in dispensing technology, we offer our customers not only customized solutions, but also consulting, developing and production services regarding the processing of Keratherm® sealing compounds.

Improved thermal, mechanical and electrical properties, which cannot be achieved by conventional products such as heat conducting pastes or thermal conducting tapes, can be generated by our specially developed dispensing materials.

Using the latest dispensing systems for sample production or prototyping and fully automated and robot-controlled manufacturing lines for serial production, we produce in fully air-conditioned cleanrooms.



### Technical characteristics of dispensed applications:

- outstanding adaptability and compressibility
- low mechanical stress
- high thermal conductivity
- long term stability
- compatible with industrial production sequences
- good electrical insulation



### You benefit from:

- a professional service-provider for dispensing production and technology
- a more economical dispensing material compared to conventional thermal pastes and tapes
- a time-saving, easy assembly, due to the prefabricated ready-dispensed components

**We look forward to receiving your inquiry!**



## Kerafol® - Services

### Customer specific tape development and production

#### Tape development with your raw material from lab scale to mass production



KERAFOL® keramische Folien GmbH, is one of the world's leading manufacturers of ceramic films. Experience and know-how range from a large number of products to customer specific solutions.

#### We offer:

- Customer specific solutions
- Consulting and development
- Production services from lab scale to mass production

As a specialist in producing ceramic films we can offer you the development of films from your raw material and production services from lab scale to mass production. Depending on the material, it is possible for us to develop and produce films in a thickness of 20 µm to 2 mm and widths from 160 mm to 1000 mm.

An independent research laboratory, equipped with modern facilities, test and measurement equipment, as well as technicians and laboratory technicians from various disciplines enable us to implement your needs quickly and effectively.

Materials such as aluminum oxide, zirconium oxide, ferrites, enamels, porcelain, mullite, Sic, LTCC, glass solders and many more have already been developed into films.

Customers from all over the world use our experience and our know-how. You too can be a satisfied customer and take advantage of short reaction times and a fast and efficient implementation.

We look forward to your challenge!

**KERAFOL®**  
KERAMISCHE FOLIEN GMBH

**Stegenthumbach 4-6**  
**92676 Eschenbach, Germany**  
**Tel. +49 (0)9645/ 88300, Fax. +49 (0)9645/ 88390**  
**eMail: [info@kerafol.com](mailto:info@kerafol.com), Internet: [www.kerafol.com](http://www.kerafol.com)**

The data presented in this leaflet are in accordance with the present state of our knowledge. All statements, technical information and recommendations herein are based on tests we believe to be reliable. The customer is thereby not absolved from carefully checking all supplies immediately on receipt. The recommendations made in this catalogue should be checked by preliminary trials because of conditions during processing over which we have no control, especially where other companies' raw materials are also being used. Before using, user shall determine the suitability of the product for its intended use, and the user assumes all risks and liability whatsoever in connection therewith. We reserve the right to alter product constants within the scope of technical process or new developments. The recommendations do not absolve the customer from the obligation of investigating the possibility of infringement of third parties' right and, if necessary, clarifying the position. Sellers' and manufacturer's only obligation shall be to replace such quantity of the product proved to be defective. Neither seller nor manufacturer shall be liable either in tort or contract for any loss or damage, direct or incidental, or consequential, including loss of profits or revenue arising out of the use or the inability to use a product. No statement, purchase order or recommendations by seller or purchaser not contained herein shall have any force or effect unless in an agreement signed by the officers of the seller and manufacturer.

# Customized Solutions!

We look forward to receiving your inquiry!



Innovations in Technology and Environmental Protection are the objectives of Kerafol®.

Competent customer-oriented advice and problem solutions are our principles as well as a constant further development of our product range to provide the optimal solution for each application.

Discover our wide range of products and benefit from a broad range of applications!

## For further information please contact:

### **KERAFOL®**

Keramische Folien GmbH  
Stegenthumbach 4-6  
D-92676 Eschenbach i. d. OPf.  
Tel: +49 (0)9645 / 88 300  
Fax: +49 (0)9645 / 88 390  
e-mail: [info@kerafol.com](mailto:info@kerafol.com)  
Internet: [www.kerafol.com](http://www.kerafol.com)