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KERAFOL

Hightech aus der Oberpfalz

Keramische Folien GmbH

Keratherm® - Thermal Compounds
GF 255, GF 300

Applications:

- RD-RAM modules
- Memory chips
- Chipsets
- Micro BGA
- Heat pipe thermal solutions
- high voltage electronics components

Ceramic-filled, two-component silicone elastomers. Because of their various thermal conductivities and differing compressibility behavior, their good dielectric properties and being free of solvents, these materials are ideally suitable for encapsulating or dispensing. A wide range of different material viscosities makes them suitable for "wet-in-wet" production. Customer-specific solutions for the compound and processing technology are our strength.

Properties	Unit	GF 255	GF 300
Basic material		silicone	silicone
Colour		red	blue
Mixing ratio		1 : 1	1 : 1
Viscosity	Pas	30 - 55	60 - 85
Curing	T [°C]	½ h;120°C	
Technical properties			
Thermal resistance	K/W	0.83	0.41
Thermal impedance	°Cmm²/W Kin²/W	243 0.39	120 0.19
Thermal conductivity λ	W/mK	1.5	3.0
Breakdown voltage $U_{d;\,ac}$	kV	-	-
Dielectric breakdown $E_{d;\,ac}$	kV/mm	1,5	1,0
Measured thickness	mm	0.5	0.5
Hardness	Shore 00	10 - 25	40 - 55
Density	g/ml	1.7	1.9
Application temperatur	°C	-40 bis +200	
Possible thickness*	mm	0.2 – 4.0	0.2 – 3.0

Dispensing technology as a service: consulting, development and production

As a specialist for dispensing technology we offer consulting, developing and production services for the application of thermal material to different heat sinks or to customized components. Using the latest dispensing systems for sample production or prototyping and fully automated, robotcontrolled manufacturing lines for serial production, we produce in fully air-conditioned clean rooms.

Advantages of dispensing:

- 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!

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Processing of Keratherm® GF 255 and GF 300 Thermal Compounds

General information:

- Silicone thermal compounds are physiologically safe
- Silicone hardeners / curing agents are physiologically safe
- We recommend the use of protective industrial lotion
- Avoid contact with skin
- No irritation to the respiratory system when using thermal compounds

Pre-treatment: The parts to be sealed should be dry, clean and grease-free.

Preparation: The silicone thermal compounds contain filler materials which may show sedimentation, depending on the storage temperature. It is therefore necessary to stir the compound thoroughly before the actual mixing process.

Mixing: Kerafol's silicone thermal compounds and their silicone curing agents (component B) must be mixed in the prescribed proportions. After intensive mixing with a suitable stirrer, the compound is immediately ready for use.

The use of cartridges is not recommended, since mixing of the components by a static mixer can no longer be performed. During the mixing process, ensure that no air is brought into the material. Avoid long standby times. Pay attention to the specified processing times. Silicone thermal compounds are moisture-sensitive. After mixing, sealing compounds should always be evacuated for a period of at least 10 minutes at < 100mbar.

Applications: The processing time ranges from approx. 25 minutes up to 3 hours! The viscosity will increase slightly during this time, so you should only prepare as much material as you can process within this time. If the silicone thermal compound will be processed by means of dosing equipment, then it is possible to adjust the processing time with the aid of accelerators. Processing of the compound beyond this time should be avoided since the processing conditions will continuously change due to the curing process (viscosity increase, viscidity of the sealing compound, etc.).

Curing conditions: For specific curing times please refer to the datasheets. The heating regime from room temperature onwards should not climb faster than 5 K/min. When tempering or post-curing incompletely cured thermal compound, entrapped air can expand and cause smoke formation. It is therefore important to ensure that no bubbles are formed during dispensing. When curing at room temperature, please note that heat treatment can change the hardness slightly. Silicone thermal compounds that have been cured at room temperature should not be fully stressed mechanically and electrically before approx. 4 days waiting time.

Suitability for storage: At least 6 months in original packaging. When opened, the contents should be used as soon as possible since, due to the influence of humidity, the reactivity of the material can diminish.