FD503-TG20

Thermally Conductive Potting Compound

A medium-viscosity, two-part addition-cure potting compound with a thermal conductivity of 2.0 ± 0.1 W/(m·K). Designed for potting inductors, power modules and electronic components; no cure by-products are produced.

Uncured properties

Property	Value	Method / reference
Appearance	A: grey liquid; B: white liquid	Q/GZJTHG42-2022
Viscosity, parts A and B	3,000-5,000 mPa·s	GB/T 2794
Mix ratio, A:B	1:1 by weight	Q/GZJTHG42-2022
Mixed viscosity	3,000-5,000 mPa·s	GB/T 2794
Working time	≥40 min	Q/GZJTHG42-2022
Cure time at 80°C	≤30 h (verification required)	ASTM D2240*
Cure time	≤3 h	ASTM D2240*

Cured properties

Property	Value	Method / reference
Hardness	Shore 00: 55-65	ASTM D2240
Thermal conductivity	2.0 ± 0.1 W/(m·K)	ASTM D5470
Dielectric strength	≥8 kV/mm	GB/T 1695
Volume resistivity	≥1.0 × 10^{12} Ω·cm	GB/T 1692
Density	2.6 ± 0.1 g/cm^3	GB/T 533

Test conditions. Uncured properties: freshly produced material tested at room temperature on the day of production. Mechanical and electrical properties: fully cured specimens.

Data notes. The original table explicitly gives ≤30 hours at 80°C, alongside a separate ≤3 h entry with no temperature. These conflicting entries require confirmation before setting a production cure schedule.

* Cure-time method references are retained as printed in the original data. They do not define a validated cure-time test. Viscosity is expressed in mPa·s (1 mPa·s = 1 cP).

Application and processing

Applications and substrate compatibility

Inductors, power modules and electronic components requiring potting and thermal protection. Suitable substrates listed in the product data include PC, PP, ABS, PVC and metals. Check compatibility with the actual assembly before use.

Operating temperature range: -40°C to +200°C.

Processing

1. Pre-mix. Stir parts A and B thoroughly in their separate containers. Mechanical stirring is recommended. Use separate tools for each part to prevent cross-contamination.

2. Mix. Weigh parts A and B at a ratio of 1:1 and mix until uniform.

3. Degas. Vacuum-degas the mixture for 1-3 minutes.

4. Dispense. Pour promptly into the assembly before the mixture thickens and loses flow.

5. Cure. Confirm the cure schedule before production. The product description specifies heated cure, while the processing instructions also permit room-temperature cure. The 80°C cure-time entry requires verification; do not interpret it as 30 minutes.

Cure inhibition

Partially cured condensation-cure silicones, amine-cured epoxies, and wax or rosin residues on solder joints may inhibit cure. Test compatibility before use and clean the application area where necessary.

Packaging and storage

Packaging: 10 kg or 25 kg per component, supplied in drums for parts A and B.
Shelf life: 12 months at 0-35°C in tightly sealed containers in a dry place. Separation may occur during storage; stir each part thoroughly before use. Use mixed material promptly. Use material beyond its shelf life only after checking and confirming it is suitable for use.

Handling and application guidance

Do not ingest. Avoid eye contact. Obtain the current Safety Data Sheet for handling and transport information. Evaluate the product under the intended application and processing conditions before production use. Performance may vary with use conditions. Contact DBSilco at sales@dbsilco.com for pricing and orders.

RoHS and REACH compliance are stated in the original product data. Obtain current supporting documentation for your application.