FD503-TG30

Thermally Conductive Silicone Potting Compound

A two-part addition-cure silicone with a thermal conductivity of ≥3.0 W/(m·K), for potting inductors, power modules and electronic components. It cures at room temperature or with heat, without producing cure by-products.

Uncured properties

Property	Value	Method / reference
Appearance	A: red liquid; B: white liquid	Q/GZJTHG42-2022
Viscosity, parts A and B	8,000-15,000 mPa·s	GB/T 2794
Mix ratio, A:B	1:1 by weight	Not specified
Mixed viscosity	8,000-15,000 mPa·s	GB/T 2794
Working time	≥30 min	Q/GZJTHG42-2022
Cure time	≤6 h	GB/T 531*
Cure time at 80°C	≤60 min	GB/T 531*

Cured properties

Property	Value	Method / reference
Hardness	Shore A 40-60	GB/T 531
Thermal conductivity	≥3.0 W/(m·K)	ASTM D5470
Dielectric strength	≥15 kV/mm	GB/T 1695
Volume resistivity	≥1.0 × 10^{13} Ω·cm	GB/T 1692
Density	3.0 ± 0.1 g/cm^3	GB/T 533

Test conditions. Uncured properties: 25°C and 55% relative humidity. Mechanical and electrical properties: fully cured specimens.

Data notes. The ≤6 h cure value has no specified cure temperature. The separately stated heated cure condition is ≤60 min at 80°C.

* 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. Minimum poured thickness: 0.5 mm.

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. Room-temperature or heated cure is possible. Higher temperatures accelerate cure. The table lists ≤6 hours at an unspecified temperature and ≤60 minutes at 80°C.

Cure inhibition

Contact with the following materials may inhibit cure. Check compatibility with the intended substrates and residues before use.

- Release agents and detergents.
- Certain plasticizers in insulating plastics, wire and cable insulation, and grommets.
- Materials containing nitrogen, phosphorus, sulfur or halogens, including natural rubber and neoprene.
- Soldering flux residues, including rosin.
- Organometallic compounds containing lead, tin or mercury, and condensation-cure silicones.
- Amine-containing materials, including polyurethane and epoxy systems.

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 compliance is stated in the original product data. Obtain current supporting documentation for your application.