

Thermally conductive products

Thermicast® TA 25003

Description:

Thermicast® TA 25003 is a flame-retardant, two-component epoxy resin system with high thermal conductivity for the encapsulation of electronic assemblies. Thermicast® TA 25003 The material has been specially developed to meet the increasing demands for efficient heat dissipation and offers improved thermal conductivity over conventional thermally conductive potting compounds.

Due to its good flowability, Thermicast® TA 25003 is easy to process and is particularly suitable for applications with high demands on heat dissipation, electrical insulation and fire protection, for example in LED technology, power electronics and industrial controls. Thermicast® TA 25003 meets the requirements of UL94 V-0 flame retardancy and contains no abrasive fillers, which protects mixing and dosing equipment.

Features:

Thermicast® TA 25003 has the following characteristics: two-component epoxy resin system, flame retardant (UL94 V-0), good electrical insulation, free of abrasive fillers, low shrinkage during curing, good moisture resistance and suitable for automatic dosing systems.

Applications:

Thermicast® TA 25003 is particularly suitable for: Encapsulation of electronic assemblies, power electronics, power supplies, transformers, sensors, LED modules, control units, DC/DC converters, telecommunications electronics and industrial electronics

Delivery forms:

Thermicast® TA 25003 can be supplied in syringes, tubes, cartridges, cups and buckets.

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Processing:

Resin and hardener must be carefully mixed according to the specified mixing ratio. Air pockets should be avoided as far as possible. For series applications, automatic mixing and dosing systems are recommended. Any fillers that may have settled in the resin must be completely stirred before processing. If necessary, the resin can be slightly heated to reduce viscosity and improve flow behavior.

Note:

Avoid skin and eye contact. Use appropriate personal protective equipment. Tools and mixing systems should be cleaned with a suitable cleaner before curing

Storage conditions:

Thermicast® TA 25003 should be stored at room temperature in dry rooms. Shelf life for cartridge system approx. 12 months. At very low storage temperatures, the hardener can crystallize. In this case, the container should be carefully heated to about 40 °C until the crystals have completely dissolved.

Processing characteristics:

Feature	Unit	Value
Mixing ratio (weight)	-	20,8 : 1
Mixing ratio (volume)	-	8,15 : 1
Resin system	-	Epoxy resin
Color: Resin		grey
Color Hardener		black
Color Mixed		grey

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Technical characteristics of the cured system:

Feature	Unit	Value
Density	g/cm ³	2,23
Tensile strength	MPa	Approx. 60
Compressive strength	MPa	120
Thermal conductivity	W/m·K	1,59
Electrical dielectric strength	kV/mm	10
Relative Permittivity (50 Hz)	–	6
Dissipation factor (50 Hz)	-	0,06
Volume resistance	Ω·cm	1 × 10 ¹⁵
Shore Hardness	Sore D	90
Heat deflection	°C	60
Coefficient of Thermal Expansion	ppm/°C	30
Comparative Tracking Index (CTI)	V	>850
Water absorption (10 days / 20 °C)	%	< 0.5
Water absorption (1 h / 100 °C)	%	< 1
Elongation at break	%	0,4
UL94	-	V-0
RoHS 2 (2011/65/EU)	-	Compliant

Curing:

Temperature	Curing in hours
23°C	24
60 °C	4
100°C	1

For large potting volumes, the material should first be annealed at room temperature and then post-cured to reduce heat build-up during the reaction.

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Trademark information: Thermicast® is a registered trademark of Dr Dietrich Müller GmbH, Germany.

Please note:

The information in this technical data sheet is based on our current knowledge and experience. Due to the wide range of possible influences during application, it does not exempt the processor and user from carrying out their own tests and trials. A legally binding guarantee of certain properties or suitability for a specific application cannot be derived from our information. Depending on the individual case, we recommend consulting us. The recipient of our products is responsible for observing any industrial property rights and existing laws.
