Technical Data Sheet

Q-Sil 553 (EE Q-Sil 553)
Thermally conductive 2-Part Potting Compound

Introduction

QSil 553 is 2-component, addition-cure, silicone elastomer system. It has been specially designed for electronic assembly potting applications.
The fully cured elastomer offers good protection against shock, vibration and environmental contamination

Key Features

- Simple 1:1 mix ratio
- Two colours assist mixing
- Moderately low viscosity
- Long pot life
- Fast cure at elevated temperature
- Thermally conductive rubber
- Non-corrosive
- Easily repaired

Use and Cure Information

How to Use
Always use clean tools when mixing QSil 553.
If degassing is required, it is recommended that the mixing vessel have a capacity of at least 3 times that of the product.
Avoid contact with organic compounds of sulphur, phosphorus, nitrogen and tin which behave as catalyst poisons.

Mixing
Using clean tools, mix each component separately to ensure homogeneity.
Combine equal weights or volumes of QSil 553 Parts A and B in a suitable clean mixing vessel until a uniform mix is obtained.
Scrape down the walls part way through the mixing stage and avoid excessive aeration and heat build up.
Once mixed the material will have a working life of approximately 120 minutes.

Degassing
This can be done quickly in a vacuum chamber using intermittent evacuation at 20 to 40 mbar, taking care to avoid vessel overflow. After releasing the vacuum, allow the mixture to stand for a few minutes before use.

Application and Cure

Q-Sil 553 can be cured at room temperature or at elevated temperatures of up to 150°C. It cures fast to a uniform and slightly flame retardant potting compound.

Storage and Shelf Life
Q-Sil 553 should be stored in its original unopened containers at temperatures below 30º
Under these conditions each component will remain useful for up to 12 months.

Property	Test Method	Value
Uncured Product		
Colour:		Grey
Appearance:		Viscous liquid
Mix Ratio:		1:1
Viscosity:		
A Part:	Brookfield	5000 mPa.s
B Part:	Brookfield	3500 mPa.s
Mixed:	Brookfield	4200 mPa.s
Pot Life:		180 minutes *
* measured at 23+/-2°C and 65% relative humidity.		
Cured Elastomer (after 7 minutes at 150°C)		
Tensile Strength:	BS903 Part A2	1.20 MPa
Elongation at Break:	BS903 Part A2	175 %
Modulus at 100% Strain:	BS903 Part A2	0.60 MPa
Hardness:	ASTM D 2240-95	32° Shore A
Specific Gravity:	BS 903 Part A1	1.60
Thermal Conductivity:		0.68 W/mK
Coefficient of Thermal Expansion:		
Volumetric		650 ppm / °C
Linear		217 ppm / °C
Min. Service Temperature:		-50 °C
Max. Service Temperature:	AFS 1540B	260 °C
Electrical Properties		
Volume Resistivity:	ASTM D-257	3.8×10^{15} Ω.cm
Dielectric Strength:	ASTM D-149	>18 kV/mm

Flammability

Thickness		*Rating*
3.00 mm	UL-94	V-0

Curing Time

Temperature °C	*Time*
25	24 hours
150	7 minutes

Customers are advised to carry out their own tests on clean, degreased substrates to ensure satisfactory adhesion is achieved
All values are typical and should not be accepted as a specification.

Health and Safety: Detailed advice for the safe handling and disposal of Q-Sil 553 is given in the individual product Material Safety Data Sheets, available on request.

Packages: Q-Sil 553 is supplied in kits consisting of 2 packages containing the same weight of Parts 'A' and 'B'

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