Technical Data Sheet

QSil553

SILCOTHERM 2 Part Addition cure silicone encapsulant

Introduction

This is a 2-component, silicone elastomer system specially designed for electronic potting and encapsulation applications. It offers good protection against chemicals, environmental contamination, mechanical shock, vibration and impact damage. It can be employed in areas where low flammability is a prerequisite. The cured elastomer can be repaired. The component parts have relatively low viscosities and are readily mixed either by hand or machine

Key Features

- Thermally conductive
- UL94 V0 Approved file No. E205830
- Low modulus
- 1:1 Mix Ratio

Use and Cure Information

IMPORTANT:

The 'A' part o fthe product contains the platinum catalyst, great care should be taken when using automatic dispensing equipment. Please ensure that it is not contaminated by residual hydride containing rubber in the dispensing equipment, as curing will result. If in doubt, it's advised to thoroughly purge the equipment with a suitable hydrocarbon solvent or silicone fluid.

Mixing

Both the 'A' and 'B' parts should be well stirred to ensure the material is uniform and any settled the fillers have been remixed.

Place the required amount of 'A' and 'B' parts by weight at the mix ratio shown opposite, in a clean plastic or metal container of approximately 3 times their volume, and mix until the colour of the mixture is uniform. For best results, we recommend degassing. Degas by intermittent evacuation, the larger volume of the mixing vessel helps prevent overflow during this operation. In the case of automatic dispensing with static mixing head, the two components should be degassed before processing. Recommended vacuum conditions are 30-50 mbar intermittently over 5-10 minutes. Cast the mixture either by gravity or pressure injection.

Inhibition of Cure

Great care must be taken when handling and mixing all addition cured silicone elastomer systems, ensuring that all the mixing tools (vessels and spatulas) are clean and constructed in materials which do not interfere with the curing mechanism. The cure of the rubber can be inhibited by the presence of compounds of nitrogen, sulphur, phosphorus and arsenic; organotin catalysts and PVC stabilizers; epoxy resin catalysts and even contact with materials containing certain of these substances e.g. moulding clays, sulphur vulcanised rubbers, condensation cure silicone rubbers, onion and garlic.

Curing Conditions

The data offers a guide to the rate of cure at various temperatures, mixing of the components at temperatures between 15 and 25°C is recommended to ensure adequate pot life for degassing and handling. The pot life can be extended to several hours by chilling the components before mixing.

Health and Safety

Safety Data Sheets available on request.

Property	Test Method	Value
Uncured product		
Appearance		**Viscous Liquid**
Colour A Part		**Beige**
Colour B Part		**Black**
Cure Type		**Addition**
Max Cure Hrs @ 25 °C		**24 hrs**
Max Cure Mins @ 100 °C		**7 mins**
Mix Ratio		**1:1**
Pot Life mins		**100 mins**
Rheology		**Liquid**
SG A Part	BS ISO 2781	**1.63**
SG B Part	BS ISO 2781	**1.63**
Self Bonding		**No**
Viscosity A-Part mPas	Brookfield	**6000 mPas**
Viscosity B-Part mPas	Brookfield	**6000 mPas**
Viscosity Mixed mPas	Brookfield	**6000 mPas**
Cured product		
After 15 minutes at 150°C		
CTE Linear ppm/°C		**217 ppm/°C**
CTE Volumetric ppm/°C		**650 ppm/°C**
Colour		**Grey**
Duro Shore A	ASTM D 2240-95	**45**
Elongation %	ISO 37	**240 %**
Max Working Temp +°C	AFS_1540B	**260 °C**
Min Working Temp - °C		**-55 °C**
Modulus @ 100% Strain MPa		**1.24 MPa**
SG	BS ISO 2781	**1.63**
Tear kN/m	BS ISO 34-1	**7.8 kN/m**
Tensile MPa	ISO 37	**1.72 MPa**
Thermal Conductivity W/mK		**0.68 W/mK**
UL 94V-0		**Yes**
Storage		
Max storage temperature °C		**30 °C**
Shelf life		**24 mths**
Electrical properties		
Dielectric Constant @ 1kHz	ASTM D-150	**3.08**
Dielectric Strength kV/mm	ASTM D-149	**>18 kV/mm**
Dissipation Factor @ 1kHz	ASTM D-150	**0.009**
Volume Resistivity ohms cm	ASTM D-257	**4.02E+14 ohms cm**

Packaging

CHT Encapsulants are available in a variety packaging including bulk containers. Please contact our sales department for more information.

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