

QSi553

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 of the 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 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 vulcanized 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.

Packaging

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

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Property

Uncured product

Appearance
 Colour A Part
 Colour B Part
 Cure Type
 Max Cure Hrs @ 25 °C
 Max Cure Mins @ 100 °C
 Mix Ratio
 Pot Life mins
 Rheology
 SG A Part
 SG B Part
 Self Bonding
 Viscosity A-Part mPas
 Viscosity B-Part mPas
 Viscosity Mixed mPas

Test Method

BS ISO 2781
 BS ISO 2781
 Brookfield
 Brookfield
 Brookfield

Value

Viscous Liquid
 Beige
 Black
 Addition
 24 hrs
 7 mins
 1:1
 100 mins
 Liquid
 1.63
 1.63
 No
 6000 mPas
 6000 mPas
 6000 mPas

Cured product

After 15 minutes at 150 °C

CTE Linear ppm/°C
 CTE Volumetric ppm/°C
 Colour
 Duro Shore A
 Elongation %
 Max Working Temp + °C
 Min Working Temp - °C
 Modulus @ 100% Strain MPa
 SG
 Tear kN/m
 Tensile MPa
 Thermal Conductivity W/mK
 UL 94V-0

217 ppm/°C
 650 ppm/°C
 Grey
 45
 240 %
 260 °C
 -55 °C
 1.24 MPa
 1.63
 7.8 kN/m
 1.72 MPa
 0.68 W/mK
 Yes

Storage

Max storage temperature °C
 Shelf life

30 °C
 24 mths

Electrical properties

Dielectric Constant @ 1kHz
 Dielectric Strength kV/mm
 Dissipation Factor @ 1kHz
 Volume Resistivity ohms cm

ASTM D-150
 ASTM D-149
 ASTM D-150
 ASTM D-257

3.08
 >18 kV/mm
 0.009
 4.02E+14 ohms cm

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