

Q-Sil 573

Thermally conductive silicone elastomer

Introduction

Q-Sil 573 is a liquid, 2-component, addition-cure silicone system. It cures at ambient or elevated temperature to a silicone rubber with excellent electrical insulating properties whilst retaining good thermal conductive properties.

Q-Sil 573 is recommended for the encapsulation of sensitive electronic assemblies and is readily repairable.

It is completely neutral and will not cause corrosion of electrodes and other metal parts.

Key Features

- Room temperature cure
- Cure can be accelerated by heat
- Neutral and non-corrosive
- Low viscosity
- Excellent thermal conductivity
- Tough, protective rubber
- Resistant to reversion

Use and Cure Information

Equipment

Vessel, spatulas and stirrers used to mix Q-Sil 573 must be clean and free from contaminants such as compounds of nitrogen, sulphur, phosphorus which can poison the platinum catalyst.

Catalyst contamination will seriously affect the cure characteristics and at worst can completely inhibit cure.

Mixing

Mix each component part separately using clean equipment to ensure homogeneity.

Charge equal parts by weight or volume of Part 'A' and Part 'B' to a vessel of at least 2 times the total volume and mix until the blend is uniform in colour, avoiding excessive aeration.

The mixture can be readily degassed in a few minutes by intermittent evacuation at reduced pressure (25 to 40 mbar).

Flammability Rating

Based on similar product performance, QSil573 is expected to meet the requirements of UL94 V-0 at 3 mm thickness and UL94 V-1 at 1.5 mm thickness.

Adhesion

Primers are available to enhance adhesion performance if required.

Customers are advised to carry out their own tests on clean, degreased substrates to ensure satisfactory adhesion is achieved

Packages: Q-Sil 573 is supplied in kit form consisting of equal quantities of Parts 'A' and 'B'

Storage: If stored at room temperature (25°C), in the original unopened sealed containers, the product is expected to have a shelf life of 6 months. The product must be mixed well, using a high torque paddle mixer, before use to disperse sediment.

Revision Date: 29.10.10

The information and recommendations in this publication are to the best of our knowledge reliable. However nothing herein is to be construed as a warranty or representation. Users should make their own tests to determine the applicability of such information or the suitability of any products for their own particular purposes. Statements concerning the use of the products described herein are not to be construed as recommending the infringement of any patent and no liability for infringement arising out of any such use is to be assumed.

Property

Uncured Product

| Property | Test Method | Value |
|-------------|-------------|----------------|
| Colour | | |
| A Part: | | White |
| B Part: | | Grey |
| Appearance: | | |
| A Part: | | Viscous liquid |
| B Part: | | Viscous liquid |
| Mix Ratio: | | 1:1 |
| Viscosity: | | |
| A Part: | Brookfield | 6000 mPa.s |
| B Part: | Brookfield | 6000 mPa.s |
| Mixed: | Brookfield | 6000 mPa.s |
| SG A Part | | 2.10 |
| SG B Part | | 2.10 |
| Pot Life: | | 180 minutes * |

* measured at 23+/-2°C and 50+/-5% relative humidity.

Cured Elastomer

(after 15 minutes at 150°C)

| | | |
|-----------------------------------|----------------|--------------|
| Tensile Strength: | AMB-015 | 1.05 MPa |
| Elongation at Break: | AMB-015 | 50 % |
| Hardness: | ASTM D 2240-95 | 65° Shore A |
| Specific Gravity: | AMB-020 | 2.10 |
| Linear Shrinkage: | AMB-026 | 0.10 % |
| Thermal Conductivity: | Lees Disc | 1.19 W/mK |
| Coefficient of Thermal Expansion: | | |
| Volumetric | | 465 ppm / °C |
| Linear | | 155 ppm / °C |
| Min. Service Temperature: | | -50 °C |
| Max. Service Temperature: | AFS 1540B | 200 °C |

Electrical Properties

| | | |
|------------------------------|------------|----------------------------|
| Volume Resistivity: | ASTM D-257 | 5.06x10 ¹³ Ω.cm |
| Dielectric Constant (1000Hz) | | 4.92 |
| Dissipation Factor | | 0.005392 |

Curing Time

| Temperature °C | Time |
|----------------|------------|
| 25 | 24 hours |
| 80 | 60 minutes |
| 110 | 30 minutes |
| 150 | 15 minutes |

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 573 is given in the individual product Material Safety Data Sheets, available on request