

## QSil 553 2-Part Encapsulation and Potting Silicone

### Description

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

- 100% solids - no solvents
- Long pot life
- Low modulus and good elongation
- UL94 V0 listed in file No. E205830

### Application

Electrical insulator, application cars e.g. encapsulation of ABS control unit.

### 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 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.

It is important to check the compatibility in preliminary tests if unknown substrates are used.

### Health & 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

| Property                               | Test Method | Value            |
|--|-------------|------------------|
| Cure Profile                           |             | 15 mins at 150°C |
| Cure Type                              |             | Addition         |
| De-mould Time / Full Cure at 23°C/73°F |             | 24 hr hrs        |
| Density A                              | BS ISO 2781 | 1.63             |
| Density B                              | BS ISO 2781 | 1.63             |
| Mix Ratio By Weight                    |             | 1:1              |
| Rheology                               |             | Liquid           |
| Viscosity Mixed                        | Brookfield  | 6000 cP          |

#### Cured Product

|                        |                |                                  |
|------------------------|----------------|----------------------------------|
| Color                  |                | Grey                             |
| Elongation at Break    | ISO 37         | 240 %                            |
| Hardness Shore A       | ASTM D 2240-95 | 45                               |
| Max Working Temp       |                | 240 °C / 464 °F                  |
| Min Working Temp       |                | -55 °C / -67 °F                  |
| Tear Resistance (N/mm) | BS ISO 34-1    | 7.8 N/mm / 45 ppi                |
| Tensile Strength       | ISO 37         | 1.72 N/mm <sup>2</sup> / 249 psi |
| Thermal Conductivity   |                | ~0.68 W/mK                       |
| UL File No.            |                | E205830                          |

#### Electrical Properties

|                                    |            |                        |
|------------------------------------|------------|------------------------|
| Comparative Tracking Index (volts) |            | 600 volts              |
| Dielectric Constant                | ASTM D-150 | 3.08                   |
| Dielectric Strength (V/mil)        |            | 500 V/mil              |
| Dissipation Factor                 | ASTM D-150 | 0.009                  |
| Volume Resistivity (Ohms cm)       | ASTM D-257 | 40200000000000 ohms cm |

#### Storage

|                         |                |
|-------------------------|----------------|
| Max Storage Temperature | 38 °C / 100 °F |
| Shelf Life              | 24 mths        |

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