

## SE2003

### Characterization

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 applied in areas where low flammability is a prerequisite. The cured elastomer can be repaired. The component parts have relatively low viscosities and are easily mixed either by hand or machine.

#### Key Features

- Room temperature cure
- Non-corrosive
- Excellent thermal conductivity
- Resistant to reversion

### Technical Data

|                         | <b>SE2003</b><br>Component A                             | <b>SE2003</b><br>Component B |                     |                 |
|-------------------------|--|------------------------------|---------------------|-----------------|
| <b>Colour</b>           | White  | Red                          |                     |                 |
| <b>Viscosity</b>        | 40,000   | 30,000                       | mPa·s               | Brookfield HBTD |
|                         | <b>Mixture</b>   |                              |                     |                 |
| <b>Cure Type</b>        | Addition   |                              |                     |                 |
| <b>Rheology</b>         | Viscous liquid   |                              |                     |                 |
| <b>Self-bonding</b>     | No   |                              |                     |                 |
| <b>Mixing ratio</b>     | 1:1  |                              | according to weight |                 |
| <b>Mixed Viscosity</b>  | 35,000   |                              | mPa·s               | Brookfield HBTD |
| <b>Colour</b>           | Brick red  |                              |                     |                 |
| <b>Pot Life</b>         | 120  |                              | min                 |                 |
| <b>Max Cure @ 25°C</b>  | 24   |                              | h                   |                 |
| <b>Max Cure @ 100°C</b> | 120  |                              | min                 |                 |
| <b>Cured product</b>    | <b>Afer 7 days at 23°C +/-2°C and 50% +/-5% humidity</b> |                              |                     |                 |
| <b>CTE Linear</b>       | 155  |                              | ppm/°C              |                 |
| <b>CTE Volumetric</b>   | 465  |                              | ppm/°C              |                 |
| <b>Duro Shore A</b>     | 80   |                              |                     | ASTM D 2240-95  |
| <b>Working Temp.</b>    | -50 to 250   |                              | °C                  | AFS-1540B       |

|                                    |          |        |             |
|------------------------------------|----------|--------|-------------|
| <b>Tensile</b>                     | 3.3      | MPa    | ISO 37      |
| <b>Elongation</b>                  | 40       | %      | ISO 37      |
| <b>Modulus Youngs</b>              | 16.9     | MPa    |             |
| <b>Tear</b>                        | 3.3      | kN/m   | ISO 34-1    |
| <b>Linear Shrinkage</b>            | 0.1      | %      |             |
| <b>SG</b>                          | 2.3      |        | BS ISO 2781 |
| <b>Thermal Conductivity</b>        | 1.27     | W/m*K  |             |
| <b>UL 94V-0</b>                    | No       | ppm    |             |
| <b>Electrical properties</b>       |          |        |             |
| <b>Dielectric Constant @ 1 KHZ</b> | 6        |        | ASTM D-150  |
| <b>Dielectric Strenght</b>         | 22.5     | kV/mm  | ASTM D-149  |
| <b>Surface Resistivity</b>         | 1.76E+16 | Ohm    | ASTM D-257  |
| <b>Volume Resistivity</b>          | 2.53E+16 | Ohm*cm | ASTM D-257  |

## Storability / Storage

With a proper storage the product will hold for approx. 12 months if stored properly below 30°C and protected from frost in a dry place in closed original containers.

The above given values are product describing data. Please consult the 'delivery specification' for binding product specifications. Further data about product properties, toxicological, ecological data as well as data relevant to safety can be found in the safety data sheet.

## Application Technique

### Application

IMPORTANT:

Component A of product contains the platinum catalyst; great care should be taken when using automatic dosing equipment. Please ensure that it is not contaminated by residual elastomers containing hydride as otherwise 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 settlements of the fillers have been remixed.

Mix the required amounts of components A and B by weight at the mix ratio shown above 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 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 absolutely important to check the compatibility in preliminary tests if unknown substrates are used.**

## **Safety**

Please observe our EC safety data sheets and the safety remarks on our container labels when handling our products. The dangerous goods regulations and the accident prevention regulations of the professional associations must be particularly observed. Keep the EC safety data sheet of the applied product at hand since it provides you with useful instructions for the safe use and disposal of the product as well as for actions to be taken in case of accidents.

**We reserve the right to modify the product and technical leaflet.**

**Our department for applied technique is always at your service for further information and advice.**

Our technical advice and recommendations given verbally, in writing or by trials are believed to be correct. They are neither binding with regard to possible rights of third parties nor do they exempt you from your task of examining the suitability of our products for the intended use. We cannot accept any responsibility for application and processing methods which are beyond our control.

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