

# SE2003

## 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

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

### 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.

Revision Date : 02/11/2017

Download Date : 18/11/2019

| Property   | Test Method    | Value                           |
|--|----------------|---------------------------------|
| <b>Uncured product</b>                                       |                |                                 |
| Appearance   |                | <b>Brick red viscous liquid</b> |
| Colour A Part  |                | <b>White</b>                    |
| Colour B Part  |                | <b>Red</b>                      |
| Cure Type  |                | <b>Addition</b>                 |
| Max Cure Hrs @ 25 °C   |                | <b>24 hrs</b>                   |
| Max Cure Mins @ 100 °C                                       |                | <b>30 mins</b>                  |
| Mix Ratio  |                | <b>1:1</b>                      |
| Pot Life mins  |                | <b>120 mins</b>                 |
| Rheology   |                | <b>Viscous Liquid</b>           |
| Self Bonding   |                | <b>No</b>                       |
| Viscosity A-Part mPas  | Brookfield     | <b>40000 mPas</b>               |
| Viscosity B-Part mPas  | Brookfield     | <b>30000 mPas</b>               |
| Viscosity Mixed mPas   | Brookfield     | <b>35000 mPas</b>               |
| <b>Cured product</b>   |                |                                 |
| <b>After 7 days cure at 23° +/-2° C and 50+/-5% humidity</b> |                |                                 |
| CTE Linear ppm/°C  |                | <b>155 ppm/°C</b>               |
| CTE Volumetric ppm/°C  |                | <b>465 ppm/°C</b>               |
| Colour   |                | <b>Brick Red</b>                |
| Duro Shore A   | ASTM D 2240-95 | <b>80</b>                       |
| Elongation %   | ISO 37         | <b>40 %</b>                     |
| Linear Shrinkage %   |                | <b>0.1 %</b>                    |
| Max Working Temp + °C  | AFS_1540B      | <b>250 °C</b>                   |
| Min Working Temp - °C  |                | <b>-50 °C</b>                   |
| Modulus Youngs MPa   |                | <b>16.9 MPa</b>                 |
| SG   | BS ISO 2781    | <b>2.3</b>                      |
| Tear kN/m  | BS ISO 34-1    | <b>3.21 kN/m</b>                |
| Tensile MPa  | ISO 37         | <b>3.3 MPa</b>                  |
| Thermal Conductivity W/mK                                    |                | <b>1.27 W/mK</b>                |
| UL 94V-0   |                | <b>No</b>                       |
| <b>Storage</b>   |                |                                 |
| Max storage temperature °C                                   |                | <b>30 °C</b>                    |
| Shelf life   |                | <b>12 mths</b>                  |
| <b>Electrical properties</b>                                 |                |                                 |
| Dielectric Constant @ 1kHz                                   | ASTM D-150     | <b>6</b>                        |
| Dielectric Strength kV/mm                                    | ASTM D-149     | <b>22.5 kV/mm</b>               |
| Surface Resistivity ohms                                     | ASTM D-257     | <b>1.76E+16 ohms</b>            |
| Volume Resistivity ohms cm                                   | ASTM D-257     | <b>2.53E+16 ohms cm</b>         |

The information and recommendations in this publication are to the best of our knowledge reliable. However, nothing herein is to be construed as warranty or representation. Users should make their own test to determine the applicability of such information or the suitability of any products for their own particular purposes. Statements concerning the user 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. All values are typical and should not be accepted as a specification