

## SE 2005 (RTV 2005) Silicone 2 part encapsulant

### Introduction

SE 2005 is a 2-component room temperature vulcanising silicone rubber system that is employed as an encapsulant for sensitive electrical and electronic assemblies.

It is cured by the addition of Curing Agent A to produce a moderately hard silicone rubber, which offers good protection against chemicals and environmental contamination.

### Key Features

- Low viscosity and good flow properties
- Excellent dielectric properties
- Environmental protection
- Protection against shock and vibration
- Excellent deep section cure

### Use and Cure Information

#### Catalysation

SE 2005 is cured by the addition of 0.25 to 1% of Curing Agent A by weight, based on SE 2005.

The condensation curing mechanism begins as soon as catalyst is mixed into the rubber base.

Under normal conditions of temperature and humidity the catalysed rubber has a working life of approximately 3 hours when catalysed with 0.25% Curing Agent A and 60 minutes with 1% Curing Agent A. This gives the user adequate time for degassing and pouring.

The rubber base should be mixed prior to catalysation to ensure homogeneity. The Curing Agent A should be mixed into the rubber base to produce a uniform blend. It is recommended that this be done in a clean container with a volume of approximately 3 to 4 times that of the rubber. Invariably this results in some entrapment of air, which is best removed by the method described below.

#### Curing

Ambient temperature and humidity conditions are considered to be 15 to 30°C and 50 to 70% Relative Humidity.

It is recommended that no heat should be applied to accelerate cure as this can have adverse effects on the properties of the cured rubber. Under the above conditions SE 2005 will cure to a relatively hard silicone rubber in approximately 24 hours.

Sections deeper than 10mm should be allowed to cure for 48 hours to ensure full cure.

### Storage and Shelf Life

All packages of SE 2005 and Curing Agent A should be stored in a clean, dry area in their original sealed containers.

**Under these conditions the SE2005 has a shelf-life is 9 months** and the Curing Agent A 12 months.

### Property

#### Uncured Product

Property	Test Method	Value
Colour:		White
Appearance:		Viscous liquid
Viscosity:	Brookfield	9000 mPa.s
Pot Life:		60 minutes
* measured at 23+/-2°C and 65% relative humidity.		

#### Cured Elastomer

**(after 7 days at 23+/-2°C and 65% relative humidity)**

Tensile Strength:	BS903 Part A2	1.08 MPa
Elongation at Break:	BS903 Part A2	180 %
Tear Strength:	BS903 Part A3	2.0 kN/m
Hardness:	ASTM D 2240-95	40 ° Shore A
Specific Gravity:	BS 903 Part A1	
Linear Shrinkage:		0.50 %
Thermal Conductivity:		0.24 W/mK
Coefficient of Thermal Expansion:		
Volumetric		762 ppm / °C
Linear		254 ppm / °C
Min. Service Temperature:		-50 °C
Max. Service Temperature:	AFS 1540B	220 °C

### Electrical Properties

Volume Resistivity:	ASTM D-257	3x10 <sup>14</sup> Ω.cm
Dielectric Strength:	ASTM D-149	>18 kV/mm
Power Factor at 1MHz:	BS903 Part C3	5x10 <sup>-3</sup>
<b>Permittivity</b>	<b>BS903 Part C3</b>	<b>3.4</b>

### Curing Time (with 1% Curing Agent A)

Temperature °C	Humidity %	Time
23	65	24 hours

Customers are advised to carry out their own tests on clean, degreased substrates to ensure satisfactory adhesion is achieved. All values are typical and should not be accepted as a specification.

**Health and Safety:** Please refer to the individual product Material Safety Data Sheets for information on the safe handling and disposal of products mentioned in this Technical literature.

**Packages:** Kits of SE2005 and Curing Agent A are available in the following net quantities: 1.01kg; 5.05; 20.25, 202 kg

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