TECHNICAL DATA SHEET

SE2011
2 part encapsulation and potting silicone

Description

This
is a self-bonding 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.

This silicone elastomer has the benefit of developing chemical adhesion to a variety of substrates and is compatible with many sensitive substrates including copper, brass, steel, aluminium, FR4, and plastics making this an ideal option where fast curing and adhesion are needed without the use of a primer.

Key Features

- Adhesive at room temperature
- Fast curing at room temperature
- Low viscosity
- UL recognised in file No. E334038

Application

Junction box potting for solar / photovoltaic cells

Use and Cure Information

The product is supplied as two components ‘A’ and ‘B’. These components should be mixed together in the ratio by weight shown opposite. Mixing can be done by hand or by automated dispensing machine using a static mixer nozzle. A nozzle of at least 9 GXF type elements is recommended for uniform mixing of both components.

The dispensing machine mix ratios should be adjusted if mixing by volume and not weight. IMPORTANT the mixed components will cure in the nozzle so to preserve nozzles a continuous process is required or a change of nozzle after the task is completed. Complete mixing of each component is achieved within the first 50-60% of the nozzle.

Mixing

Both the ‘A’ and ‘B’ parts should be well stirred to ensure the material is uniform and any settlement of 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 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.

Property	Test Method	Value
Uncured Product		
Cure Type		**Condensation**
De-mould Time / Full Cure at 23°C/73°F		**2 hrs**
Density A	BS ISO 2781	**1.05**
Density B	BS ISO 2781	**0.83**
Mix Ratio By Weight		**10:1**
Pot Life mins at 23°C/73°F		**20 min mins**
Rheology		**Liquid**
Self Bonding		**Yes**
Viscosity A	Brookfield	**4400 cP**
Viscosity B	Brookfield	**100 cP**
Viscosity Mixed	Brookfield	**4000 cP**
Cured Product		
7 days at 23+/-2°C and 50+/-5% humidity		
CTE Volumetric ppm/°C		**837 ppm/°C**
Color		**Black**
Density	BS ISO 2781	**1.08 g/cm3**
Elongation at Break	ISO 37	**270 %**
Hardness Shore A	ASTM D 2240-95	**23**
Linear Coefficient of Thermal Expansion (ppm/°C)		**279 ppm/°C**
Linear Shrinkage (%)		**2.8 %**
Max Working Temp		**220 °C / 428 °F**
Min Working Temp		**-50 °C / -58 °F**
Tensile Strength	ISO 37	**0.9 N/mm2 / 131 psi**
Thermal Conductivity		**0.2 W/mK**
UL File No.		**E334038**
Youngs Modulus (N/mm2)		**0.29 N/mm2 / 42 psi**
Electrical Properties		
Dielectric Constant	ASTM D-150	**3.28**
Dielectric Strength kV/mm	ASTM D-149	**23.4 kV/mm / 594 V/mil**
Dissipation Factor	ASTM D-150	**0.029**
Volume Resistivity (Ohms cm)	ASTM D-257	**1.09E+14 ohms cm**
Storage		
Max Storage Temperature		**40 °C / 104 °F**
Shelf Life		**6 mths**

Adhesion

Ensure all substrates are clean are free of surface contaminates. A Solvent degreaser is recommended for metallic substrates and Iso-propanol solvent is recommended for plastics and polycarbonates. A mechanical bond to the substrates will develop shortly after applying. A chemical bond will develop after 24 hours and maximum adhesion is reached after 7 days.

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

Health & Safety

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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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