Technical Data Sheet

QSil12
Transparent Encapsulant

Introduction

QSil12 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 A and C parts to produce a moderately hard silicone rubber, which offers good protection against chemicals and environmental contamination, shock and vibration.
The component parts have relatively low viscosities and are readily mixed in a simple **20:1** ratio.

Key Features

- **Optically Clear**
- **Good adhesion with use of a primer**
- **Low Viscosity**
- **Good deep section cure**

Applications

QSil12 is recommended for potting, embedding and encapsulating delicate electrical and electronic equipment; sealing and caulking.

Use and Cure Information

Mixing

The A and C parts of the rubber must be mixed thoroughly with to produce a uniformly cured product. Mixing can be carried out mechanically or by hand, but care should be taken to avoid trapping air in the mixture since this can cause voids in the cured rubber.

De-aeration

For applications where such voids are undesirable the mixture should be de-aerated under reduced pressure before use.
The time and pressure required for de-aeration depends on the quantity of the liquid being used. As a guide, 150g of base liquid can be de-aerated in 5-10 minutes at a pressure of 5-10 mm of mercury. Containers should be only two-thirds full to prevent overflow during the initial stages of de-aeration.

Curing

The curing process begins, without exotherm, immediately the liquid and curing agent are mixed together.
Ambient temperature and humidity conditions are considered to be 15 to 30ºC and 50 to 70% Relative Humidity.
This material can also be vulcanised at elevated temperatures (up to 70°C) to increase the cure speed.

Cure Time @ 25ºC **16 hrs**

Revision Date: 3/10/2014

Property	Test Method	Value
Uncured Product		
Colour A Part:		**Transparent**
Colour B Part:		**Transparent**
Appearance:		**Clear Liquid**
Viscosity A Part:	Brookfield	**1400 mPa.s**
Viscosity C Part:	Brookfield	**15 mPa.s**
Catalysed viscosity	Brookfield	**1100 mPa.s**
Pot Life:		**120 minutes ***
SG 'A'Part		**1.0**
SG 'C'Part		**0.85**
* measured at 23+/-2°C and 65% relative humidity		
Cured Elastomer		
(After 7 days cure at 23+/-2°C and 50% relative humidity)		
Colour		**Transparent**
Hardness:	ASTM D 2240-95	**19° Shore A**
Specific Gravity:	BS 903 Part A1	**0.99**
Linear Shrinkage:		**1 %**
Thermal Conductivity:		**0.18 W/m**
Coefficient of Thermal Expansion:		
Volumetric		**900 ppm / °C**
Linear		**300 ppm / °C**
Min. Service Temperature:		**-55°C**
Max. Service Temperature:	AMB-035	**220 °C**

Electrical Properties

Surface Resistivity

Volume Resistivity:	ASTM D-257	**1.0E+13 Ω.cm**
Dielectric Strength:	ASTM D-149	**>17kV/mm**
Dielectric Constant at 1 kHz:	ASTM D-150	**3.00**

Flammability

UL94 V-0 Rated **No**

Adhesion

QSIL12 silicone rubber compounds require the use of a primer to bond to a non-silicone surface. Thoroughly clean the substrate with a non-oily solvent such as naphtha or methyl ethyl ketone (MEK) and let dry. Then apply a uniform, thin film of Primer No. 3 and allow drying for 30 to 60 minutes.

All values are typical and should not be accepted as a specification.

Health and Safety - Material Safety Data Sheets available on request.

Packages – ACC Addition encapsulants are supplied in a range of pack sizes please contact the sales office for details

Storage and Shelf Life – Expected to be **6** months in original, unopened containers below 38°C

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