

**Q-Sil 215 (EE Q-Sil 215)**  
**Transparent Liquid Silicone Rubber**

**Introduction**

Q-Sil 215 is a 2-part, crystal clear, colourless silicone rubber system. It cures at ambient temperature or can be accelerated by heating.

The resulting elastomer is a relatively, crystal clear, colourless product that can be used to encapsulate sensitive electronic assemblies.

**Key Features**

- Low viscosity components
- No mixing of component parts required
- Solvent free
- Low temperature cure
- Wide temperature range of -60 to +200°C
- Reversion resistant
- Excellent optical clarity
- Simple 10 to 1 mix ratio
- Low shrinkage
- Excellent dielectric properties

**Use and Cure Information**

All mixing operations must be done in clean vessels made of stainless steel, HDPE, polypropylene or polystyrene using clean spatulas or stirrer blades.

Care should be taken to avoid excessive aeration.

For many applications natural degassing will be sufficient.

It may be essential to completely degas the catalysed rubber for some sensitive electronic assemblies. This is done by mixing the components in a vessel with a volume of 4 to 5 times that of the blend to prevent overflow due to expansion. The blend is degassed by intermittently evacuating at 20 to 40 mbar for 15 to 30 minutes.

The degassed rubber should be left to stand for a few minutes after releasing the vacuum to allow surface bubbles to collapse.

**Application and Cure**

Cure begins as soon as the components are mixed in the recommended ratio. Complete cure is normally achieved in 16 to 24 hours at ambient temperatures of 20 to 30°C.

Cure can be accelerated by heating the rubber to 50 to 120°C, the temperature being dictated by the sensitivity of the electronic assembly.

**Revision Date: 11.10.04**

**Property**

**Test Method**

**Value**

**Uncured Product**

Colour:		Transparent
Appearance:		Liquid
Viscosity:		
Part A:	Brookfield	5000 mPa.s
Part C:	Brookfield	1000 mPa.s
Mixed:	Brookfield	4500 mPa.s
Pot Life:		4 hours *

\* measured at 23+/-2°C and 65% relative humidity.

**Cured Elastomer  
 (after 1 hour at 100°C)**

Tensile Strength:	BS903 Part A2	4.80 MPa
Elongation at Break:	BS903 Part A2	100 %
Hardness:	ASTM D 2240-95	40° Shore A
Specific Gravity:	BS 903 Part A1	1.02
Linear Shrinkage:		0.20 %
Thermal Conductivity:		0.18 W/mK
Coefficient of Thermal Expansion:		
Volumetric		825 ppm / °C
Linear		275 ppm / °C
Refractive index:		1.406
Specific Heat:		1.255 kJ/kg
Min. Service Temperature:		-60 °C
Max. Service Temperature:	AFS 1540B	204 °C

**Electrical Properties**

Volume Resistivity:	ASTM D-257	1.7x10 <sup>15</sup> Ω.cm
Dielectric Strength:	ASTM D-149	19.7 kV/mm
Dielectric Constant at 1kHz:	ASTM D-150	2.69
Dissipation Factor at 1kHz:	ASTM D-150	6x10 <sup>-4</sup>

**Curing Time**

<i>Temperature °C</i>	<i>Time</i>
25	20 hours
100	1 hour

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:** Detailed advice for the safe handling and disposal of Q-Sil 215 is given in the individual Material Safety Data Sheets, available on request

**Packages:** Q-Sil 215 is supplied in matched kits consisting of 10 parts of Part 'A' and 1 part of Part 'C'

**Storage:** Both parts should be stored in their original unopened containers at temperatures between 5 and 25°C. Under these conditions both parts will be useful for up to 12 months