

QSiI 229 Transparent liquid silicone rubber

Introduction

QSiI 229 is a 2-component, clear liquid silicone elastomer system specially designed for electronic potting applications. It offers good protection against impact damage and can be employed in areas where low flammability is a prerequisite. The cured product is a hard, medium to high modulus elastomer that can be repaired. The component parts have relatively low viscosities and are readily mixed in a simple **1:1** ratio.

Key Features

- **Convenient 1:1 mixing ratio for use in automatic/hand mixing.**
- **Low viscosity, with electrical insulation/shock resistance.**
- **Contains no solvent, and a non yellowing catalyst system.**
- **Composition provides hydrolytic stability/reversion resistance**
- **Primerless adhesion to most substrates**

Use and Cure Information

How to Use

IMPORTANT: QSiI 229 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.

Mix both the A and B parts gently to ensure homogeneity. Place the required amount of A and B parts by weight at the ration of **1:1** (A to B) in a clean plastic or metal container of approximately 4 to 5 times their volume, and mix until the colour of the mixture is uniform. 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.

Curing Conditions

The following table offers a guide to the rate of cure of **QSiI 229** at various temperatures.

Temperature, °C	Max Cure Time
100	2 hrs
150	1 hr

Inhibition of Cure

Great care must be taken when handling and mixing all addition cured silicone elastomer systems, 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 vulcanised rubbers, condensation cure silicone rubbers, onion and garlic.

The information and recommendations in this publication are to the best of our knowledge reliable. However nothing herein is to be construed as a warranty or representation. Users should make their own tests to determine the applicability of such information or the suitability of any products for their own particular purposes. Statements concerning the use 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.

Property	Test Method	Value
Uncured Product		
Colour A Part:		Clear to cloudy
Colour B Part:		Clear to cloudy
Appearance:		Clear Liquid Silicone
Viscosity A Part:	Brookfield	~2900 mPa.s
Viscosity B Part:	Brookfield	~2900 mPa.s
Catalysed viscosity	Brookfield	2900 mPa.s
Specific Gravity A Part		~1.0
Specific Gravity B Part		~1.0
* measured at 23+/-2°C and 65% relative humidity		

Cured Elastomer

(after 1 hour of curing at 150°C)

Hardness:	ASTM D 2240-95	65 Shore A
Linear Shrinkage:		~0.1 %

Thermal Properties

Thermal Conductivity:		0.18 W/mK
Coefficient of Thermal Expansion:		275 ppm / °C
Specific Heat, cal/gm, C		0.3
Min. Service Temperature:		-60°C
Max. Service Temperature:	AFS 1540B	200 °C

Optical Properties

Refractive Index, 589nm		1.409
Transmittance, 400nm, 1mm path		>98.0%

Electrical properties

Dielectric Strength		19.69 kV/mm
Dielectric Constant @ 1000Hz		2.69
Dissipation Factor @ 1000 Hz		0.0006
Volume Resistivity		1.7E+15 Ωcm

Adhesion

Self Bonding	Yes
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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 – QSiI 229 should be stored in the original unopened container at 25°C. It will remain useful for a period of 12 months if stored under these conditions.

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