TECHNICAL DATA SHEET

QSil 960
Condensation cure for potting applications

Description

QSil 960 is a red, high temperature, self-leveling, two-component, condensation cure, silicone material primarily intended for potting applications. The two applicable catalysts are 0.5% DBT by weight and 10% Deep Section Catalyst by weight which gives a self leveling material with a work life of approximately 60 minutes. The material will be fully cured after 24 – 36 hours at room temperature. The 0.5% catalyst level can be increased or decreased to obtain desired cure speed.

Key Features

- Self-levelling
- Variable cure speed
- Excellent thermal stability
- Retention of elastomeric properties within the temperature range of -115°C - 260°C

Application

Potting, aerospace, fixation of heat shield tiles for space vehicles

Use and Cure Information

MIXING

If using QSil Deep Section Catalyst as the curing agent, it should be thoroughly mixed prior to use. QSil 960 should be catalyzed by weight with the appropriate amount of curing agent. A concentration of 0.5% DBT catalyst or 10% Deep Section Catalyst will provide a gel time approximately 60 minutes and a cure time of 24 hours. Cure may be accelerated by using DBT catalyst in increments of 0.1%. Material should be mixed in a clean, compatible metal of plastic container. The volume of the container should be 4 – 5 times the volume of the material to be catalyzed. Thoroughly mix using clean tools, scraping the bottom and the side of the container to produce a homogeneous mixture.

DE-AERATION

Air trapped during mixing should be removed to eliminate voids in the cured product. Vacuum de-airing may be necessary to completely remove all entrapped air bubbles. To ensure proper de-airing, subject the mixed material to 29 inches of mercury. When using QSil 960 for potting, a deaeration step may be necessary after pouring to avoid capturing air in complex assemblies.

DEEP SECTION CURE

Cured QSil 960 should be properly conditioned prior to service if it is to be used in deep sections at temperatures over 150 °C (32 °F). Following room temperature cure of 1 – 3 days, a typical program would be eight hours at 50 °C intervals from 100 °C (212 °F) to the service temperature. Longer times at each temperature will be required for larger parts of very deep sections.

BONDING

QSil 960 rubber compounds require a primer to bond to non-silicone surfaces. Thoroughly clean the substrate with a non-oily solvent such as naphtha or methyl ethyl ketone (MEK) and let the surface dry. Then apply a uniform thin film of a suitable silicone primer to air dry for one hour or more.

Property	Test Method	Value
Uncured Product		
Cure Type		**Condensation**
Density A	BS ISO 2781	**1.42**
Density B	BS ISO 2781	**1.04 g/cm3**
Drying / Fixing Conditions		**24 hrs at room temperature**
Gel Time at 25°C/77°F		**60 min**
Mix Ratio By Weight		**100:0.5**
Rheology		**Liquid**
Viscosity A-Part mPas	Brookfield	**24000 mPas**
Cured Product		
Colour		**Red**
Elongation at Break (%)	ISO 37	**130 %**
Hardness Shore A	ASTM D 2240-95	**50**
Max Working Temp (°C)		**260 °C / 500 °F**
Min Working Temp (°C)		**-115 °C / -175 °F**
Tear Resistance (N/mm)	BS ISO 34-1	**3.47 N/mm / 20 ppi**
Tensile Strength (N/mm2)	ISO 37	**3.45 N/mm2 / 500 psi**
Electrical Properties		
Dielectric Constant	ASTM D-150	**3.9**
Dielectric Strength (V/mil)		**550 V/mil**
Dielectric Strength kV/mm	ASTM D-149	**21.7 kV/mm / 551 V/mil**
Dissipation Factor	ASTM D-150	**0.02**
Volume Resistivity (Ohms cm)	ASTM D-257	**2E+14 ohms cm**
Storage		
Max Storage Temperature		**4.4 °C / 40 °F**
Shelf Life (mths)		**12**

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UNCATALYZED			
TEST	**QSil 960**	**DBT Catalyst**	**Deep Section Catalyst**
Appearance	Red	Clear/light yellow	Beige
Viscosity	24,000 cps	N/A	6,500 cps
Specific Gravity	1.42	1.04	1.47
Percent Solids	100%	N/A	N/A

CATALYZED	
MIX RATIO 10:1 with Deep Section Catalyst or 100:0.5 for DBT Catalyst	
PROPERTY	**RESULT**
Appearance	Red
Gel Time at 25 °C *	60 minutes
Rheology	Self leveling

* Gel time is defined as the time required for the material to become a solid or a semi-solid.

Storage

See product label and/or CoA for specific "Use By Date". Product should be stored in its original, unopened container. Storage beyond the date specified on the label does not necessarily mean that the product is no longer usable. In this case, the properties required for the intended use should be checked for quality assurance reasons.

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