TECHNICAL DATA SHEET

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QSil 960
Condensation cure for potting applications

Description

This 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% QSil 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

CATALYSTS		
TEST	**DBT Catalyst**	**QSil Deep Section Catalyst**
Appearance	Clear/light yellow	Beige
Viscosity	N/A	6,500 cps
Specific Gravity	1.04	1.47

Property	Test Method	Value
Uncured Product		
Cure Profile		**24 hrs at 25°C**
Cure Type		**Condensation**
Gel Time at 25°C/77°F		**60 minutes**
Mix Ratio By Weight		**100:0.5 or 10:1**
Rheology		**Liquid**
Specific Gravity		**1.42**
Viscosity	Brookfield	**24,000 cP**
Cured Product		
24 hours at 25°C		
Color		**Red**
Elongation at Break	ISO 37	**130 %**
Hardness Shore A	ASTM D 2240-95	**50**
Max Working Temp		**260 °C / 500 °F**
Min Working Temp		**-115 °C / -175 °F**
Tear Resistance (N/mm)	BS ISO 34-1	**3.47 N/mm / 20 ppi**
Tensile Strength	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		**12 mths**

MIXING

If using QSil Deep Section Catalyst as the curing agent, it should be thoroughly mixed prior to use.

The base should be catalyzed by weight with the appropriate amount of curing agent. A concentration of 0.5% DBT catalyst or 10% QSil 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 or 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 this material for potting, a deaeration step may be necessary after pouring to avoid capturing air in complex assemblies.

DEEP SECTION CURE

Cured material 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

These 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.

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