

QSiI 58 Condensation cure potting material

Description

This is a high temperature, self-leveling, two-component silicone material primarily used for potting applications. The two applicable catalysts are 0.5% DBT by weight and 10% Deep Section Catalyst by weight. The 0.5% catalyst level can be increased or decreased to obtain desired cure speed. Cure speed can be accelerated by adding DBT catalyst in increments of 0.1%.

This can be catalyzed with 10% Deep Section Catalyst for application requiring a deeper cure.

The material can also be vulcanized at temperatures up to 70°C to increase cure speed.

Key Features

- Excellent thermal stability
- Self-leveling
- Variable cure speed
- Useful temper range of -54°C (-65°F) - 260°C (500°F) continuously and up to 316°C (600°F) intermittently

Use and Cure Information

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

MIXING

If using QSiI 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% QSiI Deep Section Catalyst will provide a gel time of one hour and a cure time of 24 hours. Cure speed can be accelerated by adding 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 de-aeration 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.

Revision Date 12 Oct 2021
Revision No 5
Download Date 03 Jul 2024

Property

Uncured Product

Cure Profile	24 hrs at 25°C
Cure Type	Condensation
Gel Time at 25°C/77°F	50 minutes
Mix Ratio By Weight	100:0.5 or 10:1
Rheology	Liquid
Specific Gravity	1.48
Viscosity	Brookfield 9,000 cP

Cured Product

24 hours at 25°C	
Color	Red
Hardness Shore A	ASTM D 2240-95 58
Max Working Temp	260 °C / 500 °F
Min Working Temp	-54 °C / -65 °F
Thermal Conductivity	0.31 W/mK

Electrical Properties

Dielectric Constant	ASTM D-150	~4.4
Dielectric Strength (V/mil)		450 V/mil
Dielectric Strength kV/mm	ASTM D-149	13.9 kV/mm / 353 V/mil
Dissipation Factor	ASTM D-150	0.03
Volume Resistivity (Ohms cm)	ASTM D-257	2E+14 ohms cm

Storage

Max Storage Temperature	4.4 °C / 40 °F
Shelf Life	12 mths