

Technical Data Sheet

Silicone Conductive System(SCS)

Cox Sales Company 45 Durometer Condensation Cure

Silicone Elastomer

Product Description

The SCS specification covers the engineering requirements for a two component electrically conductive platinum-catalyzed elastomer that cross links at room temperature. The silicone elastomer is used as a void filler and blocking compound in electro-mechanical cables. The cured rubber has excellent mechanical and electrical conductive properties and good shelf life stability. The system is a condensation cure.

Key Features

- Good Physical Properties
- 10:1 mix ratio by weight---27:1 mix ratio by volume
- Machine or hand mix
- System not corrosive to copper
- System does not give off hydrogen

Typical Properties

UNCATALYZED PROPERTIES	
Mix Ratio	10:0.6 by weight
Mix Ratio	27:1 by volume
BASE	
Base Appearance	Part 'A' Black
Base Viscosity, cps	20000 - 30,000
Base Specific Gravity, g/cm ³	1.15 - 1.19
CATALYST	
Catalyst Appearance	Part 'B' Clear
Catalyst Viscosity, cps	100
Catalyst Specific Gravity, g/cm ²	0.97

Typical Properties Continued

CATALYZED PROPERTIES	
PROPERTY	
Catalyzed Color	Black
Catalyzed Viscosity, cps	22000
Pot Life ⁽¹⁾ (minutes)	60 - 120 minutes @ mix ratio 100:3 5-10 minutes @ 100:6

TYPICAL CURED PROPERTIES (3 DAYS @ 25C)	
Durometer, Shore A	45 ±7
Tensile Strength, psi	700
Elongation, %	200
Tear B	75
Linear Shrinkage, %	<0.1
Dielectric Strength, Volts/mil	475
Dielectric Constant	2.4
Dissipation Factor	0.00
Surface Resistivity(Ohms/cm) ASTM D 257	<700
Useful Temperature Range	-60C to 204C

(1)Pot Life is defined as the time at which the viscosity has doubled.

Cure Characteristics

The curing process begins as soon as the catalyst is mixed with the base. Under normal temperature (25C) and humidity (50% RH) conditions, the material will cure as described in the data above. Because this system is sensitive to heat and humidity, a change in cure speed may be seen if one or both of these variables are altered. Any large difference in temperature (+/-5C) or humidity (>60-70%) may change the cure profile of the material.

Mixing and De-aeration

The following procedure should be followed for obtaining optimal performance.

Charge 10 parts, **by weight**, of Part 'A' and 0.60 parts, **by weight**, of Part 'B' **or** 10 parts, **by weight** of Part 'A' and 0.30 Parts, **by weight**, of Part 'B' into a clean, compatible metal or plastic container. **When hand mixing; accurate weighing of components on a suitable scale is essential for optimal product performance.** Shake the catalyst well before use. The volume of the container should be 3-4 times the volume of the material to be mixed. This allows for expansion of the system as it d-gases.

Mix thoroughly by hand or with mixing equipment while minimizing air entrapment until a homogeneous mixture is obtained. This will occur when the material takes on a uniform color with no visible striations. Once mixing * is complete it is recommended that the material be d-aired 2-3 times by intermittent evacuation for a few minutes to minimize any imperfections due to bubbles in the cured material. Typically after releasing the vacuum 2-3 times the mass will collapse on itself at which time the vacuum should be left on only 2-4 minutes longer.

*** Machine mixed material does not normally need to be d-aired.**

Shelf-life and Storage

Part 'A' and Part 'B' should be stored in their original, sealed containers in an environment that does not exceed 90F. Under these conditions the expected shelf-life of the material is 12 months.

Not for Product Specification

The technical data listed herein is provided as a reference only and **is not** intended as sales specifications. For sales and technical assistance or for product recommendations, please call (540) 345-2636.

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