

STYCAST[®] 5952

Silicone Rubber With High Thermal Conductivity, 1:1 Mix Ratio

Description :

STYCAST 5952 is a highly thermally conductive, addition curing silicone with good elongation and moderate tear strength.

STYCAST 5952 has a simplified 1:1 by weight mix ratio and can be cured over a wide range of temperatures. Since it is an addition cure system, thick sections in totally enclosed molds are possible.

Suggested End Use :

STYCAST 5952 is recommended for encapsulation of heat-generating devices, such as transformers, rectifiers, thyristors, power supplies and heat-generating modules. Other uses include thermally conductive roll coatings, heat sinks and thermal pads. It is also recommended for those applications requiring a non-corrosive casting or coating. PRIMER S 11 is recommended for use with STYCAST 5952 to improve adhesion to non-silicone materials and to minimize the probability of cure inhibition from surface contaminants on non-silicone substrates.

Properties	Test Methods	Limits
Colour part A		red
part B		white
Viscosity (Pa.s) part A	ASTM-D-2393	50 - 70
part B	ASTM-D-2393	8 - 28
Mixed	ASTM-D-2393	25 - 45
Density (g/cm ³)	ASTM-D-792	2,0 - 2,1
Hardness, Shore A (units)	ASTM-D-2240	72 - 83
Tensile Strength (MPa)	ASTM-D-412	3 - 4
Tensile Elongation (%)	ASTM-D-412	45 - 60
Tear Strength (N/m)	ASTM-D-624	600 minimum
Thermal Conductivity (W/m.K)	ASTM-D-2214	0,93
Linear Thermal Expansion Coefficient (K ⁻¹)	ASTM-D-696	2 x 10 ⁻⁴
Dielectric Constant at 1 MHz	ASTM-D-150	5,0
Loss Tangent at 1 MHz	ASTM-D-150	0,01
Dielectric Strength (kV/mm)	ASTM-D-149	17
Volume Resistivity (Ohm.cm)	ASTM-D-257	1 x 10 ¹⁴

Instructions For Use :

PRIMER S 11 is recommended for use with STYCAST 5952 to improve adhesion to non-silicone materials and to minimize the probability of cure inhibition from surface contaminants on non-silicone substrates.

Pot life : 100 min at 25°C.

1. For each 100 parts of STYCAST 5952, Part A, add 100 parts STYCAST 5952, Part B.
2. Mix thoroughly. Power mixing is preferred to make sure that both parts have been thoroughly blended.
3. Evacuate the resin mixture to remove entrapped air.
4. Pour material into the mold.

5. The STYCAST 5952 may be cured over a broad range of temperatures. After 24 hours at room temperature, it will be hard enough to handle. Optimum properties will be achieved after 7 days. The STYCAST 5952 can be cured rapidly at elevated temperatures, even in thick sections. A typical elevated cure is 1 h at 100°C, followed by a post cure of 175°C for 2 h to ensure full properties.

Note :

Cure may be inhibited through contact with certain contaminants. Common materials which should be avoided are sulfur or sulfur containing materials, nitrogen containing materials, RTV silicone catalysts, and heavy metal salts. Molds, mixing equipment, ovens and other apparatus that will be used in the preparation and curing of STYCAST 5952 should be free of inhibiting contaminants.

Storage Conditions :

Shelf life is 12 months when stored in unopened containers at temperatures not higher than 25°C.

Safety Considerations :

It is recommended to consult the Emerson & Cuming product literature, including material safety data sheets, prior to using Emerson & Cuming products. These may be obtained from your local sales office.

(STYCAST® is a registered trademark of National Starch and Chemical Company)

(STYCAST 5952 was previously called ECCOSIL 5952)

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