

Two-Part Castable Silicone Load Absorber

TWO-PART CASTABLE SILICONE LOAD ABSORBER



Eccosorb CRS is a series of castable, magnetically loaded, RTV silicone rubber materials with high-loss in the microwave frequency range. When fully cured, Eccosorb CRS will duplicate the electrical properties of its counterpart in the Eccosorb® MFS series. For example, Eccosorb CRS-117 is electrically equivalent to Eccosorb MFS-117. Being a true elastomer, Eccosorb CRS, when cured, has a number of distinct advantages over rigid materials of the Eccosorb MF type. For electrical and physical properties of the Eccosorb CRS series, please see the datasheet on Eccosorb MF.

FEATURES AND BENEFITS

- 2-component castable
- Low outgassing

MARKETS

- Commercial Telecom
- Security and Defense

SPECIFICATIONS

TYPICAL PROPERTIES	ECCOSORB CRS-117	ECCOSORB CRS-124
Frequency Range	>1 Ghz	>1 Ghz
Service Temperature °C (°F)	<160 (<320)	<160 (<320)
Density (g/cc)	4.16	4.55
Thermal Expansion Coefficient per °C (per °F)	63×10^{-6} (35×10^{-6})	59×10^{-6} (33×10^{-6})
Thermal Conductivity W/mK	0.9	1.0
Hardness, Shore A	75	75
Water Absorption, % 24h	<0.1	<0.1
Dielectric Strength volts/mil	>10	>10
Volume Resistivity, ohm-cm	$>10^{10}$	$>10^{10}$

Data for design engineer guidance only. Observed performance varies in application. Engineers are reminded to test the material in application.

APPLICATIONS

- Eccosorb CRS can be used to cast cones, wedges and pyramids for terminations and loads.
- It can be used to fill cavities or can be painted on surfaces to suppress the flow of currents. This product line finds use in antennas and transmission lines.
- Eccosorb CRS can also be poured in place to form microwave gaskets, where a sheet elastomer would not fit. It can also be poured around the base of microwave tubes to prevent undesired energy flow.
- When bonded to surfaces, Eccosorb® CRS will withstand temperature cycling (even to cryogenic temperatures). It can be deformed and shaped to contoured surfaces and is not subject to damage from impact or shock.

AVAILABILITY

- Eccosorb CRS is available in 2 grades : CRS-117 & CRS-124.
- Eccosorb CRS is supplied as a 2-part system, consisting of a Part A(resin) and Part B (catalyst).
- Please contact your local supplier for available sizes and packages, as there might be some regional differences.

- It does not ship as a dangerous good.
- Shelf life is approximately 6 months when stored unmixed in a well sealed container at temperatures no higher than 25°C (77°F).

INSTRUCTIONS FOR USE

- Mix the Eccosorb CRS Part A in its shipping container using a power stirrer to insure homogeneity.
- Part A is supplied as a high viscosity paste. In all cases a small amount of Part B has to be added.
- Weigh out the desired amounts of both parts in the correct mix ratio as given below.
 Mix ratio : Eccosorb CRS-117: 100 parts of A to 1.18 parts of B
 Eccosorb CRS-124: 100 parts of A to 1.00 parts of B
- To insure void-free castings, the entrapped air should be removed by vacuum de-airing.
- Pour into the cavity to be filled.
- Cure overnight at room temperature or for 3 hours at elevated temperatures of 80°C (175 °F). Where use temperature is anticipated above 120°C (248 °F), a post cure is recommended. Gradually raise cast parts to the use temperature over an 8 hour or longer period.
- If cast around inserts, they place negligible curing pressures on them.
- The Eccosorb® CRS will adhere to themselves but will release from most other surfaces. Therefore, metal or epoxy molds are suitable for cast shapes. If adhesion is required, a thin coat of a suitable primer should first be applied.

Typical Attenuation

	GHz	10⁻⁷	10⁻⁶	10⁻⁵	10⁻⁴	10⁻³	10⁻²	10⁻¹	1.0	3.0	8.6	10.0	18.0
CRS-117	dB/cm	0	0	0	0	0	0.03	0.27	2.8	11	46	56	119
	dB/in	0	0	0	0	0	0.08	0.69	7.1	28	117	142	302
CRS-124	dB/cm	0	0	0	0	0	0.03	0.48	6.5	20	63	67	149
	dB/in	0	0	0	0	0	0.08	1.2	16.51	50	160	170	378

*Note: Attenuation is a theoretical property calculated from the Complex Permittivity and Complex Permeability of a lossy material and is strictly a means of comparing one absorbing material to another. The attenuation properties are not an indication of how the material will perform inside a microwave device. For further electrical and physical properties of the ECCOSORB® CRS series, please see the Typical Electrical Properties Table on the ECCOSORB® MFS technical bulletin