



# ECCOSORB<sup>®</sup> BSR

High-Loss, Ultra-Thin, Elastomeric Microwave Absorber

#### **Material Characteristics**

- Thin, flexible, high-loss, electrically non-conductive silicone rubber sheet
- Available in two types, ECCOSORB<sup>®</sup> BSR-1 and ECCOSORB<sup>®</sup> BSR-2
- Frequency range from 6 GHz to mm wave
- Low out-gassing properties for space applications
- Can be easily cut with a knife or scissors and be fitted to compound curves

#### **Applications**

- ECCOSORB<sup>®</sup> BSR is engineered to reduce or eliminate surface currents, cavity resonance, coupling, and generally dampen reflections
- ECCOSORB<sup>®</sup> BSR recommended for use in high reliability aerospace, military, and space applications, exhibiting excellent thermal cycling, shock and vibration absorption characteristics

#### Availability

- ECCOSORB<sup>®</sup> BSR is available in 12" x 12" sheets (30.5 cm x 30.5 cm)
- Standard thicknesses are 0.010" (0.25mm), 0.020" (0.51mm), 0.040" (1.01mm), 0.060" (1.52mm), and 0.100" (2.54mm)
- For most applications ECCOSORB<sup>®</sup> BSR can be supplied with a Pressure Sensitive Adhesive (PSA). Product designation denoting ECCOSORB<sup>®</sup> BSR with a PSA is ECCOSORB<sup>®</sup> BSR-X/SS6M
- ECCOSORB<sup>®</sup> BSR is available in other thicknesses, sizes, and customer specified shapes upon request
- Die cut parts can be supplied kiss cut for ease of usage in high volume applications

### Instructions for Use

 For applications where the service temperature exceeds 250°F (ECCOSORB<sup>®</sup> SS6M, PSA service temperature) ECCOSORB<sup>®</sup> BSR can be bonded to most substrates using a 2 part RTV adhesive

## **Typical Properties**

Service Temperature, °F (°C)	-65 to 320 (-54 to 160)			
Hardness, Shore A	>70			
Volume Resistivity, ohm-cm	2 x 10 <sup>8</sup>			
Thermal Expansion per °F (°C)	35 x 10 <sup>-6</sup> (63 x 10 <sup>-6</sup> )			
Thermal Conductivity, (cal)(cm)/(sec)(cm²)(°C) (BTU)(in)/(hr)(ft²)(°F)	0.0021 6.0			
Water Absorption, % 24 hours	<0.1			
%TML (with SS6M)	0.47 (0.29)			
%CVCM (with SS6M)	0.28 (0.08)			
Dielectric Strength, volts/mil	>10			
Weight, lbs/ft <sup>2</sup> (kg/m <sup>2</sup> ), .010" thick	0.23 (1.1)			
Weight, lb/ft <sup>2</sup> (kg/m <sup>2</sup> ), .040" thick	1.0 (4.88)			

# **Typical Attenuation**

	GHz	10 <sup>-7</sup>	10-6	<b>10</b> <sup>-5</sup>	<b>10</b> <sup>-4</sup>	10 <sup>-3</sup>	10 <sup>-2</sup>	10 <sup>-1</sup>	1.0	3.0	8.6	10.0	18.0
BSR-1	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
BSR-2	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

\*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. The frequencies of use recommended for ECCOSORB<sup>®</sup> BSR-1 & ECCOSORB<sup>®</sup> BSR-2 in the Typical Properties Table of this bulletin are based on application experience at Emerson & Cuming Microwave Products Inc.

EMERSON & CUMING MICROWAVE PRODUCTS, INC., 28 York Avenue, Randolph, MA 02368 / Telephone (781) 961-9600. Use of Information and Material: Values shown are based on testing of laboratory test specimens and represent data that falls within normal range of the material. These values are not intended for use in establishing maximum, minimum or ranges of values for specification purposes. Any determination of the suitability of the user's hould test in user's product and use. We hove that the information grape that the information grape of user's product and use. We hove that the information grape of the material for the user's product user's product and use. We hove that the information grape of user and is offered for the user's conductability of the outer. The suggestions in conjunction with our conditions of sale INCLUDING THOSE LIMITING WARRANTIES AND REMEDIES, which apply to all goods supplied by us. We assume no responsibility for the use of these statements, recommendations or suggestions nor do we intend them as a recommendation for any use, which would infringe any patent or copyright. Emerson & Cuming Microwave Products Inc.