

## Thin, Flexible, Resonant Microwave Absorber



### RESONANT MICROWAVE ABSORBER

Eccosorb SF is a narrow banded, magnetically loaded resonant absorber sheet for free-space applications. These silicone rubber sheets are designed to be bonded to flat or curved metallic surfaces to reduce the reflectivity in a narrow band of frequencies. Eccosorb SF reflects -20 dB or less of normally incident microwave energy at the design frequency in the range of 1 to 26 GHz.

### FEATURES AND BENEFITS

- High power performance
- Narrow band performance
- Low outgassing properties

### MARKETS

- Commercial Telecom
- Security and Defense
- Automotive

### SPECIFICATIONS

TYPICAL PROPERTIES	ECCOSORB SF
Max service temperature °C (°F)	163 (325)
Power Handling W/cm <sup>2</sup>	0.2
Hardness (Shore A)	73
Density Range g/cm <sup>3</sup>	2.4-4.5
Tensile Strength (MPa)	1.0-6.0
Elongation at break %	20 - 100
Tear Strength N/mm	0.2-2.0

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

### APPLICATIONS

- Lining radar nacelles and the exterior of airframes particularly where high power is present.
- Lining of cavity backed and shrouded telecommunication antennas where narrowband performance is required.
- Lining metal surfaces of vehicles to reduce overall radar signature.
- Attaching to masts of ships, walls, etc to reduce reflections and echoes from nearby antennas.
- Lining magnetron housings to prevent detuning.
- Fabricating into tapered shapes for impedance matching in waveguide or microstrip applications.
- Lining metal surfaces to attenuate surface currents, suppressing reflections inside microwave modules, and dampening cavity resonances in microwave modules.
- For module interference, cavity resonance and surface current problems, ECCOSORB® GDS, ECCOSORB® MCS and ECCOSORB® BSR are recommended due to their high magnetic loss properties, broad band performance, as well as the availability of a wider range of thicknesses (0.010" to 0.100").

## AVAILABILITY

- Standard sheets are 305 x 305mm (12"x12")
- Thickness varies depending on resonant frequency desired.
- Other resonant frequencies from 0.7 to 40 GHz can be supplied on special order
- The material can also be supplied in customized shapes and can be supplied with a pressure sensitive adhesive (PSA).

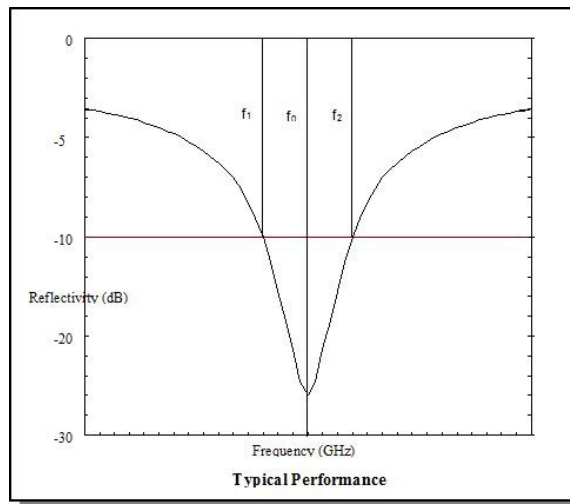
## INSTRUCTIONS FOR USE

- Eccosorb SF is designed to function directly in front of a metallic surface. If this is not the case, a metallic foil should first be bonded to the object.
- For optimum performance, material is recommended and can be supplied with a metal backing (-ML)
- To obtain a strong bond of the absorber to the object, clean the surface with a degreasing solvent, apply a thin coat of primer to the dried surface and apply an RTV silicone adhesive.
- Eccosorb SF can be readily cut with a sharp knife and template. It is a very flexible material and will conform to mild curvatures.

## RELATED PRODUCTS

- For corrosive environments, see Eccosorb® DSF
- For better abrasion resistance, see Eccosorb® SF-U

Typical Reflectivity Performance



The performance of ECCOSORB® SF is defined by reflectivity at a single frequency. A generalized performance curve is shown above. The design frequency  $f_0$ , has a  $\pm 5\%$  bandwidth, designated as  $f_1$  and  $f_2$ . Although performance degrades with increased incidence angle, at incident angles out to  $45^\circ$ , reflectivity of  $-16\text{dB}$  has been demonstrated.

RFP-DS-SF 081815

Any information furnished by Laird Technologies, Inc. and its agents is believed to be accurate and reliable. All specifications are subject to change without notice. Responsibility for the use and application of Laird Technologies materials rests with the end user. Laird Technologies makes no warranties as to the fitness, merchantability, suitability or non-infringement of any Laird Technologies materials or products for any specific or general uses. Laird Technologies shall not be liable for incidental or consequential damages of any kind. All Laird Technologies products are sold pursuant to the Laird Technologies' Terms and Conditions of sale in effect from time to time, a copy of which will be furnished upon request. © Copyright 2015 Laird Technologies, Inc. All Rights Reserved. Laird, Laird Technologies, the Laird Technologies Logo, and other marks are trademarks or registered trademarks of Laird Technologies, Inc. or an affiliate company thereof. Other product or service names may be the property of third parties. Nothing herein provides a license under any Laird Technologies or any third party intellectual property rights.