

ECCOSORB® COATING 268E & 269E

HIGH LOSS EPOXY COATINGS TO SUPPRESS SURFACE CURRENTS

Description :

ECCOSORB Coatings 268E and 269E are high loss epoxy formulations which can be brushed on surfaces.

ECCOSORB Coatings will attenuate surface currents from 50 MHz through microwave frequencies.

ECCOSORB Coating 268 E is useful from well below L-band through the microwave range.

ECCOSORB Coating 269 E is used from S-band through K-band and, in this frequency range, has the higher attenuation.

For a given application, it would be worthwhile, to try both materials, individually or in combination.

If dielectric strength is needed, ECCOSORB 268 E is preferred.

Application :

Both are useful in : reducing the Q of cavities, acting as attenuators in transmission lines, modifying antenna patterns by being applied to radiating elements, reducing the radar cross sections of complex objects.

ECCOSORB Coatings are not intended to be used to reduce the specular reflectivity of objects. However, in simple terms, objects reflect due to the specular component, the multiple reflection component and the surface wave component. The latter two can be effectively attenuated by ECCOSORB Coatings. Thus, the coatings can be applied to a sphere or to the interior of a cylindrical cavity to substantially reduce the reflectivity compared to the uncoated object.

ECCOSORB Coatings have been applied to the masts of ships and target supports in anechoic chambers.

Reductions in reflectivity of 10 dB from 1 through 16 GHz are typical on complex objects with multiple coats.

ECCOSORB Coatings are not electrically conductive. They can be painted around conductors, e.g. at the base of vacuum tubes. For good adhesion, surfaces must be clean. Coatings are tough and will withstand temperatures from cryogenic to 150°C.

Outdoor exposure is no problem. Coatings thickness for each application is about 0,4 mm. Multiple coats are possible and in general, produce more attenuation. Initial curing is at room or slightly elevated temperature. Some solvent is in the formulation.

After all solvent has evaporated, temperatures up to 75°C may be used to accelerate the cure.

Weight is less than 5 kg/m² in a thickness of 1,25 mm.

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Physical Properties:

	268E	269E
Colour	Brown-black	grey
Weight for 0.25mm coat (kg/cm ²)	1.0	1.0
Tensile strength(kg/cm ²)	70	70
Dielectric Strength (kv/mm)	11.8	1.0
Volume Resistivity (ohm.cm)	>10 ¹²	>10 ¹²
Water Absorption,% 24 hours	<0.2	<0.2
Mix Ratio by weight, A:B	100:1.7	100:1.0
Hardness (Shore D)	70	80
Maximum service temperature (°C)	150	150

Electromagnetic Properties :

	ECCOSORB 268E			ECCOSORB 269E	
Frequency GHz	1.2	3.0	8.6	3.0	8.6
Dielectric Constant	13	8.9	7.4	22.8	4.6
Dielectric Loss tangent	0.15	0.07	0.15	0	0
Magnetic Permeability	2.3	1.7	1.4	3.79	1.09
Magnetic Loss tangent	0.41	0.8	0.48	0.69	1.98
Attenuation (dB/cm)	3	9	16	20	63
Impedance Magnitude	0.4	0.5	0.5	0.4	0.4

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Availability :

ECCOSORB Coating 268E is available in kits of 2 kg containers for Part A (coating)
and 40gr for Part B (catalyst)

ECCOSORB Coating 269E is available in kits of 2 kg containers for Part A (coating)
and 50gr for Part B (catalyst)

Instructions for use :

Thoroughly mix the contents of the container in which ECCOSORB Coating 268 E (Part A) or ECCOSORB Coating 269 E (Part A) is received. Weigh out the amount required for the job at hand.

To every 100 parts by weight of Part A, add the following amount of Part B :

1,7 parts of part B to 100 parts A of ECCOSORB Coating 268 E,

1,0 parts of part B to 100 parts A of ECCOSORB Coating 269 E

Mix thoroughly. A thick flowable liquid results.

Using a paint brush, flow the material onto the surface to be coated. Apply as little pressure to the brush as possible. On vertical surfaces, a small amount of flow will occur immediately after application

For heavy build-up, apply more than one coat.

Cure will take place in about 24 hours for a thickness of 1,5 mm. If the bulk of the solvent is allowed to evaporate at room temperature, the cure may be accelerated by exposure to temperature up to 75°C.

For multilayer coatings a slower cure is desirable.

Note :

If thinner consistency of mixed material is desired, add toluene until desired consistency is obtained. Avoid excessive solvent additions as separation of loading material will occur.

Caution :

ECCOSORB Coatings 268E and 269 E contain a volatile solvent. Use in well ventilated area.

The handling of this product should present no problems if ordinary care is exercised : to avoid breathing vapours, if the skin is protected against contamination, if swallowing is avoided and if the eyes are protected.



Safety Considerations: It is recommended to consult the EMERSON & CUMING MICROWAVE PRODUCTS product literature, including material safety data sheets, prior to use EMERSON & CUMING MICROWAVE PRODUCTS products. These may be obtained from your local sales office.

WARRANTY: Values shown are based on testing of laboratory test specimens and represent data that falls within the normal range of properties 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 material or any use contemplated by the user and the manner of such use is the sole responsibility of the user who must assure that the material as subsequently processed meets the needs of this particular product or use. We hope the information given here will be helpful. It is based on data and knowledge considered to be true and accurate and is offered for the user's consideration, investigation and verification but we do not warrant the results to be obtained. Please read all statements, recommendations or 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.

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