ABS Technics

Technical data sheet

ABS-CEA
Magnetically loaded epoxy absorber

ABS-CEA is a two component liquid casting system which is used to produce 3D shaped absorber parts such as waveguide terminations and attenuators or it is used to fill complex shaped cavities with RF absorber material.
This castable absorber has similar electrical properties as ABS-SRB as such the material is also available in different loadings or grades.

Applications :

- With increasing frequencies RF-applications becomes smaller as such cavities may become very complex it might be required to cast liquid absorber material in cavities instead of bonding elastomeric absorber or bonding rigid epoxy based absorber.
- ABS-CEA is an absorber material with excellent attenuation properties. The material is used in RF applications in a broad frequency range, RF-performance of the material is related to the grade used and its thickness and frequency of operation.

Availability :

ABS-CEA is available as a two component system, 1 kit contains a part A (resin) and a part B which is the curing agent. The absorber product is supplied with curing agent in matched kits which are designed for easy use during operation. Mixings ratios are related to the grade of absorber material.
ABS-CEA is available as standard kits of 1 and 4 Kg.
Common produced grades are : ABS-CEA-200 and ABS-CEA-230.

Properties :

	Mixing ratio			
Type	Part A	Part B	Density	Frequency range
ABS-CEA-30	100	16.5	1.52	> 18 GHz
ABS-CEA-50	100	11.3	1.97	12 - 18 GHz
ABS-CEA-100	100	6.5	2.8	10 -12 GHz
ABS-CEA-150	100	4.3	3.57	6 - 10 GHz
ABS-CEA-200	100	3.2	4.11	4 - 6 GHz
ABS-CEA-230	100	2.6	4.48	< 4 GHz

Method of application :

First of all the method of application is different for permanent casting in a cavity or in case after curing the absorber material needs to be removed from a mould. For permanent fixation and adherence in a cavity the mixture can be poured immediately in the cavity.
When moulding is foreseen in a metal mould all surfaces need to be coated with a release agent, typically a wax or silicone product is used.

Suppose the absorber material will be used to mould a specific shape in a metal mould one needs to proceed as follows :
Mould surfaces must be coated with a release agent.
ABS-CEA absorber kits are supplied in 2 containers, part A (absorber resin) and part B (curing agent). From both containers the required volume to match the volume of the mold must be weighed.
In order to reduce viscosity part A must be mixed with a high speed mixer up to a temperature of 55°C, one can also leave kit part A in an oven at 55°C to pre-heat. Now combine parts A and B by its predefined proportions and continue mixing for a limited time but assure the curing agent is well distributed.
Make sure air is not trapped in the mixture a vacuum system should be used to remove air.
After de-airing pour the mixture in the metal mould, also the mould must be pre-heated up to 70°C.
Insert the mould in an pre-heated oven at 75°C.
We recommend the following curing cycles :

Oven temperature	Cure time
75°C	12 hours
90°C	4 hours
120°C	2 hours