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**Product
Bulletin**

500-01

**MICROSORB MTC-E
CASTABLE IRON LOADED RF ABSORBER**

GENERAL DESCRIPTION

MICROSORB MTC-E is a series of castable resin kits which can be used to mold waveguide terminations, attenuators, loads, and other RF absorbing parts. When cured into a solid, these parts have the same properties as parts machined from bars or blocks of **MICROSORB MTS** (see Technical Data Sheet 400-02).

MICROSORB MTC-E is available in the same range of iron loadings as **MICROSORB MTS**. In general, best performance is obtained at lower frequencies with high iron loadings, whereas low loadings work best at higher frequencies. **MICROSORB MTC-E -117** and **-124** are the preferred materials below 20 GHz.

PROPERTIES:

Hardness, Shore D	85
Thermal Conductivity	
(BTU)(in)/ (hr) (ft ²) (°F)	8.70
(cal)(cm)/(sec)(cm ²) (°C)	.003
Water Absorption, % 24 Hours	<0.1%
Dielectric Strength, v/mil (kv)/mm	>100 (>400)
Volume Resistivity, ohm-cm	>10 ¹¹
Service Temperature, °F (°C)	-40 to 350 (-40 to 180)
Tensile Strength, psi (kg/cm ²)	8,000 (560)

SPECIFICATIONS

<u>GRADE</u>	<u>SPECIFIC GRAVITY</u>
501-112	2.1
501-114	2.9
501-116	3.7
501-117	4.2
501-124	4.5

Sizes:

MICROSORB MTC-E is available in the following Kits (total weight):

- 3 lb. pint (1.35 kg total weight)
- 6 lb. quart (2.7 kg total weight)
- 25 lb. gallon (11.3 kg total weight)

Pre-measured kits are available upon request.

Permittivity and Permeability of MICROSORB MTC-E

Properties at 1.0 GHz						Properties at 10.0 GHz					
GRADE	e'	e''	m'	M''	dB/cm	GRADE	e'	e''	m'	m''	dB/cm
MTC-E-112	6	0.24	1.4	0.03	0.16	MTC-E-112	4.8	0.19	1.1	0.25	5.6
MTC-E -114	11	0.55	2.1	0.17	0.57	MTC-E -114	9.7	0.49	1.1	0.44	13.2
MTC-E -116	17	1.2	3.0	0.39	1.30	MTC-E -116	16	0.96	1.5	1.0	32
MTC-E -117	28	2.5	4.1	0.82	2.8	MTC-E -117	21	0.42	1.1	1.7	56
MTC-E -124	32	2.6	5.0	2.3	6.5	MTC-E -124	23	0.71	1.5	2.1	67

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APPLICATION:

1. Prepare mold or cavity to be filled. **MICROSORB MTC-E** will adhere well to most surfaces; therefore, if adhesion is not desired, mold surfaces must be coated with a release agent such as wax or silicone grease.
2. Kits are supplied as Part A (resin) & Part B. (hardener plus filler). Stir the contents of both containers to disperse any settled filler. Material may be heated to 150°F prior to stirring, to reduce viscosity.
3. Measure out the required amounts of material.
Combine Parts A and B in equal quantities by either weight or volume. Mix together, preferably using a power mixer. Again, keeping the mixture warm helps the homogeneity of the mix. Pot life @ 150°F is between one and two hours.
4. Best results are obtained by first degassing the **MICROSORB MTC-E** under vacuum. Pour the mixture into the mold, taking care to avoid trapping air.
5. Cure the material in an oven at 212°F for 8 hours, minimum. Allow to cool gradually before removing from mold. For large castings cure at 175°F for 10-12 hours followed by 200°F for 4 hours.

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