



CUMING MICROWAVE

C-RAM KFE

RoHS
Compliant

TECHNICAL BULLETIN 330-5

LOSSY MAGNETIC UHF EPOXY CASTING RESIN

C-RAM KFE is a casting epoxy for radar absorbers and loads, primarily for UHF and lower microwave bands.

C-RAM KFE is a three-part liquid epoxy casting system with the same electrical properties as C-RAM KFS (TB-330-6). When cured, it converts to a rigid epoxy plastic with high temperature capability. It is filled with lossy magnetic materials, mainly soft ferrites.

C-RAM KFE is used to cast or pot loads and intricately contoured parts used for attenuation of RF signals and suppression of standing waves and RF noise. It may be used to change the Q of a cavity even for low frequency (UHF) applications. Pre-molded sheets can be provided on special order.

(OF CURED MATERIAL)

Specific gravity: 3.9
Thermal Expansion: $32 \times 10^{-6}/^{\circ}\text{F}$
Thermal Conductivity: $4.0 \text{ BTU-in/hr-ft}^2\text{-}^{\circ}\text{F}$
Service Temp.: $-65 \text{ to } +500 \text{ }^{\circ}\text{F}$
Water absorption, 24 hr.: $<0.1\%$
Dielectric strength: $>100 \text{ v/mil}$
Hardness, Shore A: 75

INSTRUCTIONS FOR USE

1. Prepare mold or cavity to be filled. C-RAM KFE will adhere well to almost any substrate; 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 (epoxy resin plus filler), Part B (hardener plus filler), and Part C (catalyst). Stir the contents of Parts A and B thoroughly to disperse any separated filler. It helps to warm the material to 100°F prior to stirring.

3. Measure out the amounts of the materials required. Combine 100 parts of A with 89 parts of B and 0.1 parts of C. Mix the parts together thoroughly, preferably using a power mixer. Again, keeping the mixture warm helps.

Note: For small castings of up to 500g, one may increase part C to 0.4 parts to speed the cure.

4. Best results are obtained by degassing the mixture under a vacuum. Pot life at 100°F is approximately 1.5 hours. Pour the mixture into the mold, taking care to avoid trapping air.

5. Cure the material in an oven at 185°F overnight (or 8 hours minimum) followed by 350°F for 3 hours. If usage temperature is above 350°F, then give a 1-hour post cure at the expected usage temperature.

Note: An easy way to measure out the small amounts of Part C is to calibrate a small eye dropper. Count the number of drops required for one gram of Part C and then calculate the weight of one drop of Part C. In preparing future material batches for mixing, simply count the appropriate number of drops of Part C.

C-RAM materials are safe to use, provided care is taken to protect eyes and avoid excessive skin contact and breathing of vapors. Consult the Materials Safety Data Sheet for details.

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