Technical Data Sheet

Engineered Materials

C-FOAM™ PK

Rigid foam-in-place liquid polyurethane

Description

C-FOAM™ PK is a two-part liquid resin kit, which is mixed together to expand into a rigid polyurethane foam with good structural and electrical properties.

Available in two grades, PK-2, which expands to approximately 2.5-3 lb/cu ft. and PK-5, which expands to approximately 5-6 lb/cu ft.

C-FOAM™ PK is intended for filling cavities of electronic and microwave devices such as waveguides, instrument housings, and radomes. Encapsulate RF antennas and electronic components.

The liquid material is sensitive to moisture and should be shipped and stored in sealed containers purged with nitrogen.

Availability

C-FOAM™ PK is available as a 16 pound kit, 8 lbs of part A, and 8 lbs of part B, each in a gallon can. It is also available as a 4 pound kit, 2 lbs Part A and 2 lbs part B, each in a quart can. The material is sold by weight, not volume, so the containers will not be completely filled.

When ordering, specify grade and size, for example:

- C-FOAM™ PK-2 16lb KIT
- C-FOAM™ PK-5 4lb KIT

Typical properties of cured foam

	PK-2	PK-5
Dielectric constant, 10 GHz:	1.04	1.06
Dissipation factor, 10 GHz:	0.001	0.001
Compressive strength, psi:	30	50
Compressive modulus, psi:	500	800
Thermal conductivity,	0.040	0.042
BTU-in/hr-ft^2-°F:	0.012	0.018
Water absorption, 24hr.:	3.0% max.	
Service Temp, °C (°F):	-40 to +100 (-40 to +212)	

Instructions for use

Mix part A and B together in an equal weight ratio (Part A has a slightly higher density than B), and use agitation such as a mixing propeller. The mixture begins to foam and rise within 30 seconds at room temperature, and should be poured into the cavity without delay. It foams fully within 2-3 minutes and hardens after several minutes. The reaction is exothermic and generates heat.

If filling a closed cavity, calculate the volume and the amount of foam carefully; one can foam to a slightly higher density in a closed cavity, but if there is not enough volume, the expanding foam and CO_2 gas can warp or break the mold. C-FOAM™ PK generates considerable expansion pressure, so closed molds must be sturdy and have vent holes.

The final density of the foam must be determined by experiment; many factors such as ambient temperature and humidity, size of the mixture, and mixing conditions can cause variations in the final expanded density.

Cuming Microwave Corporation
Engineered Materials
264 Bodwell Street
Avon, MA 02322
Telephone +1 (508) 521-6700
Fax +1 (508) 584-2309
www.cumingmicrowave.com
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