

Product Information

ROHACELL® HF

Polymethacrylimide Foam

ROHACELL® HF is a closed-cell rigid foam based on polymethacrylimide (PMI) chemistry, which does not contain any CFC's.

With its extremely low dielectric constants and particularly favorable transmission properties in the high frequency region, ROHACELL® HF has been specially designed for antenna applications.

Applications range from miniature antennas in cell phones to large fixed ship-based and stationary antenna structures. Other advantages of ROHACELL® HF in such applications are its extremely fine cell structure that ensures minimal resin uptake, and problem-free compatibility with metallic facing materials due to the absence of corrosive effects.

ROHACELL® HF is also used in radomes and mammography plates.

Fine-cell materials can be processed by hand lay-up, prepreg, or vacuum infusion techniques at pressures up to 0.3 MPa and temperatures up to 130°C.

The thermo-formability of ROHACELL® provides a tremendous manufacturing advantage.

ROHACELL® HF could also be shaped by machining.

For further information, please contact our experts by phone +49 6151 18 1005 or e-mail rohacell@evonik.com.

Properties of ROHACELL® HF

Properties	Unit	ROHACELL® 31 HF	ROHACELL® 51 HF	ROHACELL® 71 HF	Standard
Density	kg/m³	32	52	75	ISO 845
	lbs./cu.ft.	2.00	3.25	4.68	ASTM D 1622
Compressive strength	MPa	0.4	0.9	1.5	ISO 844
	psi	58	130	217	ASTM D 1621
Tensile strength	MPa	1.0	1.9	2.8	ISO 527-2
	psi	145	275	406	ASTM D 638
Shear strength	MPa	0.4	0.8	1.3	DIN 53294
	psi	58	116	188	ASTM C 273
Elastic modulus	MPa	36	70	92	ISO 527-2
	psi	5,220	10,150	13,340	ASTM D 638
Shear modulus	MPa	13	19	29	DIN 53294
	psi	1,885	2,755	4,205	ASTM C 273
Strain at break	%	3.5	4.0	4.5	ISO 527-2
					ASTM D 638
Heat distortion temperature	°C	180	180	180	DIN 53424
	°F	356	356	356	

Technical data of our products are typical values for the nominal density.

Electrical properties of ROHACELL® HF

Properties	Frequency [GHz]	ROHACELL® 31 HF	ROHACELL® 51 HF	ROHACELL® 71 HF
Dielectric constants	2.5	1.050	1.057	1.075
	5.0	1.043	1.065	1.106
	10.0	1.046	1.067	1.093
	26.5	1.041	1.048	1.093
Loss tangent	2.5	<0.0002	<0.0002	<0.0002
	5.0	0.0016	0.0008	0.0016
	10.0	0.0017	0.0041	0.0038
	26.5	0.0106	0.0135	0.0155

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