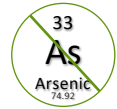


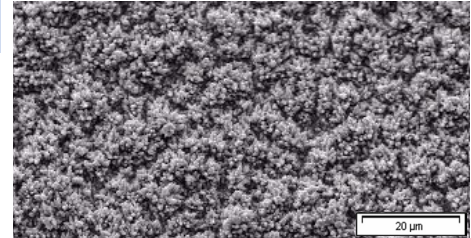
**HIGH BOND COPPER FOIL ON FLUOROPOLYMER SUBSTRATES.
ARSENIC FREE ALTERNATIVE TO HFZ-LP.**

IPC
Grade 3



TYPICAL SUBSTRATES

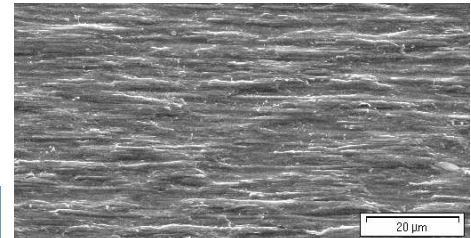
Pure or modified fluoropolymer (PTFE) resin systems.



Treated Electrolyte Side

TYPICAL PROCESSES

Radio frequency and microwave Printed Circuit Boards.
The pure copper treatment supports reducing the passive intermodulation (PIM).



Untreated Drum Side

TYPICAL APPLICATIONS

Base stations infrastructures and automotive radars.

TYPICAL AVERAGE PROPERTIES*

HFA-LP					
MEASURED PARAMETERS	UNITS	PRODUCT GAUGE		IPC	
Nominal Thickness	µm oz.	18 1/2	35 1	Specification IPC-4562A	Test Method IPC-TM-650
Area weight	g/m ²	151	288	3.4.4	2.2.12
Untreated Side Roughness Ra		≤ 0.40		3.5.6	2.2.17
Treated Side Roughness (Rz)	JIS	µm ≤ 5		-	
	ISO	≤ 6		3.4.5	
Tensile Strength Transverse (RT)	MPa	≥ 276 (≥ 40)		3.5.1	2.4.18
Tensile Strength Transverse (180 °C)	(k.Lb/in ²)	≥ 138 (≥ 20)			
Elongation Transverse (RT)	%	≥ 6	≥ 9	3.5.3	
Elongation Transverse (180 °C)		≥ 3			
Peel Strength pure PTFE ^[1] (RT)	N/mm (Lb/in)	≥ 1.6 (≥ 9.1)	≥ 2.0 (≥ 11.4)	3.5.4	2.4.8

[1] Laminate construction with thickness ≥ 0.5 mm

ALTERNATIVE For reverse treated type please consult HFA-B datasheet.
For application at higher frequencies please consult BF-HFA, BF-ANP, BF(L)-NN and BFL-NF.

* ALL OF THIS TECHNICAL INFORMATION HAS BEEN DETERMINED WITH DUE CARE AND THOROUGHNESS. HOWEVER, BECAUSE THE CONDITIONS OF USE AND PROCESS AND APPLICATION TECHNOLOGIES EMPLOYED CAN SUBSTANTIALLY VARY, THE PROVIDED DATA AND FIGURES CAN ONLY SERVE AS NON-BINDING GUIDELINES. THEY DO NOT CONSTITUTE A GUARANTEE THAT THE PURCHASED ITEM WILL POSSESS CERTAIN ATTRIBUTES. FOR THIS REASON, NO LIABILITY WHATSOEVER CAN BE ASSUMED FOR THEM. THE BUYER IS OBLIGED TO CHECK THE SUITABILITY OF ALL SUPPLIED PRODUCTS.