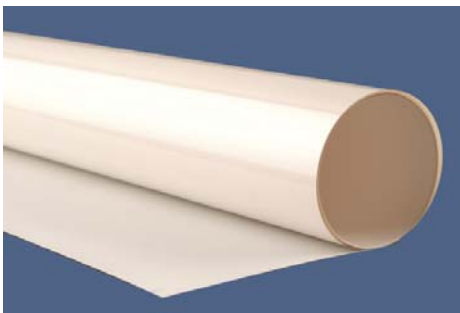


2929 Bondply Data Sheet

2929 bondply is an unreinforced, hydrocarbon based thin film adhesive system intended for use in high performance, high reliability multi-layer constructions. A low dielectric constant (2.9) and loss tangent (<0.003) at microwave frequencies makes it ideal for bonding multi-layer boards (MLB's) made using PTFE composite materials such as RT/duroid® 6000, R04000® and R03000® series laminates. The proprietary cross-linking resin system makes this thin film adhesive system compatible with sequential bond processing while controlled flow characteristics offer blind via fill capability and potentially predictable cutback ratios for designs requiring blind cavities.

2929 bondply is compatible with traditional flat press and autoclave bonding. The film is currently available in 0.0015", 0.002" and 0.003" sheet thicknesses (0.038mm, 0.051mm, and 0.076mm). Individual sheets can be stacked to yield thicker adhesive layers. The unreinforced thin film can be tack bonded to inner-layers to ease simultaneous machining of cut-outs through core and adhesive layers. An easy-to-release carrier film protects the adhesive layer from contamination during the machining and MLB booking processes.



FEATURES AND BENEFITS:

- Low Dielectric constant and loss tangent
- Ideal for multi-layer bonding
- Compatible with traditional processing methods
- Compatible with a broad range of material types including PTFE composites
- Reliable through sequential bonding
- Can be tack bonded to inner-layer surfaces prior to machining cut-outs
- Excellent blind via fill capability
- Predictable control of post-bond thickness

TYPICAL APPLICATIONS:

- Automotive Radar and Sensors
- Point-to-point Microwave
- Base Station Antennas
- Power Amplifiers
- Phased Array Radar
- RF Components
- Patch Antennas
- Power Backplanes

Property	Typical Value[1] 2929 Bondply	Direction	Units	Condition	Test Method
Dielectric Constant, ϵ_r Process	2.94 ± 0.05	Z		10 GHz/23°C	IPC-TM-650 2.5.5.5.1
Dissipation Factor	0.003	Z		10 GHz/23°C	IPC-TM-650, 2.5.5.5
Thermal Coefficient of Dielectric Constant, ϵ_r	-6	Z	ppm/°C	-50°C - 150°C	IPC-TM-650, 2.5.5.5
Volume Resistivity	7.4 X 10 ⁹		MΩ•cm	125C/24 Hours	IPC-TM-650 2.5.17.1
	5.1 X 10 ⁹			35C/90%RH/96 Hours	
Surface Resistivity	8.2 X 10 ⁹		MΩ	125C/24 Hours	IPC-TM-650 2.5.17.1
	1.5 X 10 ⁵			35C/90%RH/96 Hours	
Dielectric Strength	2500	Z	V/mil	23°C/50%RH	IPC-TM-650, 2.5.6.2
Coefficient of Thermal Expansion	50	X	ppm/°C	0-150°C	IPC-TM-650, 2.4.41
	50	Y			
	50	Z			
Thermal Conductivity	0.4	Z	W/m/°K	80°C	ASTM C518
Moisture Absorption	0.1		%	D24/23	ASTM D570
Tg	170		°C	DMA Method	IPC-TM-650 2.4.24
T-288	>30	Z	Min	TMA	
Td	400		°C	TGA 5% WT	ASTM D3850
Specific Gravity	1.5		gm/cm ³	23°C	ASTM D792
Copper Peel Strength	5.0	X,Y	pli	½ oz. EDC Post Solder	IPC-TM-650 2.4.8
Flammability	N/A				UL94
Lead-Free Process Compatible	YES				
Outgassing	TML	0.42	%		ASTM E-595
	CVCM	0.02			
	WVR	0.03			

NOTES:

[1] Typical values are a representation of an average value for the population of the property. For specification values contact Rogers Corporation.

Standard Thicknesses	Thickness Tolerance	Standard Panel Sizes
0.0015" (0.038mm) 0.0020" (0.051mm) 0.0030" (0.076mm)	+/-10%	18"X12" (457mm X 305mm) or 18"X24" (457mm X 610mm)

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Prolonged exposure in an oxidative environment may cause changes to the dielectric properties of hydrocarbon based materials. The rate of change increases at higher temperatures and is highly dependent on the circuit design. Although Rogers' high frequency materials have been used successfully in innumerable applications and reports of oxidation resulting in performance problems are extremely rare, Rogers recommends that the customer evaluate each material and design combination to determine fitness for use over the entire life of the end product.

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