



11126 Bren Road West  
 Minnetonka, Minnesota USA 55343  
 www.holiday.com

Tel 952.933.3303  
 Sales Fax (952) 933-2383  
 Purchasing Fax (952) 988-8096

Materials	Product	Description	IPC 4101/4103
<a href="#">Arlon</a>	25N	Low Loss Ceramic Filled Thermoset Resin	IPC-4103 /10
	33N	Polyimide	/40 /41
	35N	Polyimide	/40 /41
	85N	Bromine-free, High Operating Temp	/40 /41
	37N	PrePreg, No-Flow Polyimide	/42
	55NT	Epoxy Thermount	/55
	85NT	Polyimide Thermount	/53
	CuClad 250GX	Woven glass/PTFE composite	IPC-4103/02
	IsoClad 917	PTFE	/04
	51N	PrePreg Low-Flow Lead-Free	/124
	47N	Modified Epoxy, Low Flow Heatsink Bonding	4101 /21
	49N	PrePreg Low-Flow Lead-Free	/24
<a href="#">Dupont</a>	Pyrallux LG 1000	PrePreg Low Flow	IPC-4203/17
<a href="#">Isola</a>	408 HR	Lead free, Enhanced CAF, electrical performance	4101 /21 /24 /98 /99 /101 /129)
	FR406	High Tg, 170	/21 /24 /26
	370HR	Lead Free, Low CTE	/26 (/21 /24 /98 /99 /101 /126)
	GETEK	Low Dk Df, 175 C Tg, for High speed	/25
	A11-104 & 108	PrePreg, No-Flo, heat sink bonding, die cavity boards	/20
	P95	Polyimide	4101 /40 /41
	P96	Polyimide-VO	4101 /04 /41
<a href="#">Nelco</a>	N4000-6FC	Fast-Cure, High Tg	/24 /26 /28
	N4000-7	Low CTE	/24* /98
	N4000-7ef	165°C Tg Halogen-Free	/94
	N4000-29	Lead free, ROHS, High Tg FR4	/24 /26 /83 /98 /99 /126
	N4000-13	High Speed, Low Loss	/29
	N4000-13EP	Thermal reliability, CAF resistant, high speed low loss	/29
	N4000-13si	Signal Integrity, High Speed, Low Loss	/29
	N5000	BT Epoxy	/30
	<a href="#">Nelcote</a>	E-746	PrePreg, Service temperatures up to 500F
<a href="#">Norplex-Micarta</a>	NP511	Unclad G10	MIL-I-24768/3
<a href="#">Rogers</a>	RT/duroid 5880	PTFE	IPC-4103/03/04
	6002	PTFE	
	4003C	Hydrocarbon Ceramic	IPC-4103 /10
	4230	Hydrocarbon Ceramic	
	4355	Hydrocarbon Ceramic, Antenna grade, ROHS compliant	
	4350B	Hydrocarbon Ceramic	IPC-4103 /11
	4403	Hydrocarbon Ceramic	
	4450B	Hydrocarbon Ceramic	IPC-4103 /11
	4450F	Hydrocarbon Ceramic	IPC-4103 /11



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Holefill	Product	Description	Type
<a href="#">Taiyo</a>	THP-100DX1	160 C Tg by TMA, CTE 32ppm by TMA	Non-conductive
<a href="#">San-Ei Kagaku</a>	PHP-900 IR-10F	160 C Tg by TMA, CTE 32ppm by TMA	Non-conductive
<a href="#">Peters</a>	PP 2795	>140 C Tg by TMA, CTE 40ppm	Non-conductive
	SD2361	Epoxy	Non-conductive
<a href="#">DuPont</a>	CB100	91-93.5% solids (solvent based), Ag and Cu fillers	Conductive (electrically and thermally)
<a href="#">Sumitomo Bakelite - Composite Materials</a>	X28075-2HT	Used to fill Aluminum and Copper cores	Non-conductive

Surface Finish	Thickness	
In-House	Hot Air Solder Level (HASL) Electroless Ni Imm. Gold (ENIG)	coverage to 1.5 mils 120-250 uln Ni, 2-8 uln Au
	Hot Oil Reflow	.3 to .5 mils plated
	IR Fused	same
	Selective Solder Strip	same
	Electrolytic Ni/Gold	200-400 uln Ni, 5-15 uln Au (30-50 uln for tabs)
	Electrolytic Hard Ni	
Subcontract	Carbon Ink Selective Finishes	<a href="#">Minico Ink</a> Typically a global solderable finish after a selective hard/soft gold finish has been applied.
	Electroless Bondable Soft Au Electrolytic Gold (Soft)	For wire bond typically 30-50µIn on selective features. Gold has purity >99.9%, with 50-90 Knoop hardness.
	OSP	.2 to .35 microns
	Immersion Silver	6-18 uln (15 uln nominal)
	Lead Free HASL	



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Soldermask	Product	Description	Type
<a href="#">Taiyo</a>	PSR-4000 HFX	Halogen-Free (except Red) Extremely Fast Photospeed Fine Dam Resolution Excellent Resistance to ENIG and Immersion Tin Available in Dark Green, Satin Finish RoHS Compliant and Lead-Free Compatible	LPI / LDI
	PSR-4000 MP	Available in Dark Green Matte and Satin and Black Matte Excellent Solder Ball Resistance Resistance to No-Clean Flux Residue Excellent Resistance to ENIG and Immersion Tin Fine Dam Resolution Hard Surface Finish RoHS Compliant and Lead-Free Compatible	LPI
	PSR-4000 BN	Available in a Green or Dark Green Semi-Gloss High Viscosity Version for Better Edge Coverage on High Traces Best in Class for Small Hole Clearing Fine Dam Resolution Withstands ENIG and Immersion Tin RoHS Compliant and Lead-Free Compatible  colors (Black, Blue, Clear, Red, White, and Yellow Semi-Gloss)	LPI
	LDI-4000	For LDI and Conventional Exposing Low Halogen Dark Green Satin Finish RoHS Compliant Compatible with Lead-Free Processing Fine Dam Resolution Excellent Small Hole Clearing Wide Processing Window Excellent Resistance to ENIG and Immersion Tin	LDI (US)
<a href="#">DuPont</a> <a href="#">Electra</a>	Vacrel 8100	3 - 4 mils thick	Photopolymer Dry Film
	EMP 110	Carapace Family, Green (Black, Blue, Red, Yellow)	LPI
<a href="#">Rohm&amp;Haas</a>	ConforMask 2500	IPC-SM-840B Class 3 and IPC-SM-840C Class T&H, MIL-P-55110D and Bellcore, High gloss	Photopolymer Dry Film
	Dynamask 5000	IPC SM840C Class T & H, Mil P55110D and Bellcore	Photopolymer Dry Film



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Metal Cores	Product	Description	Type
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<a href="#">Schlenk</a>	CIC	Invar foil with copper plating and/or Cu/Zn-Treatment on both sides.	IPC-CF-152/2 CIC W X X
<a href="#">Bergquist Co</a>	T-Clad	This is often aluminum, but other metals such as copper may also be used. The most widely used base material thickness is 0.062" (1.6mm) in aluminum, although many thicknesses are available.	
	Aluminum Cores Copper Cores Stainless Steel		

Heatsinks	Product	Description	Type
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	Copper Aluminum Laminate Composite  Composite / Laminate / CuFilled / Milled		
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