



11126 Bren Road West  
 Minnetonka, Minnesota U.S.A 55343  
 www.HOLADAY.com

Tel 952.933.3303  
 Sales Fx 952.933.2383  
 Purchasing Fx 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	UL-94 V0
	35N	Polyimide	/40 /41
	37N	PrePreg, No-Flow Polyimide	/42
	55NT	Epoxy Thermount	/55
	85N	Bromine-free, High Operating Temp	/40 /41
	85NT	Polyimide Thermount	/53
	CuClad 250GX	Woven glass/PTFE composite	IPC-4103/02
	IsoClad 917	PTFE	/04
	51N	PrePreg Low-Flow Lead-Free	/124
	49N	PrePreg Low-Flow Lead-Free	/24
	<a href="#">Dupont</a>	Pyralux LG	PrePreg Low Flow
SPEEDBOARD C		low Dk BT resin in toughening matrix	
<a href="#">Gore</a>	IS415	Lead free, Enhanced CAF, electrical performance	/24 (/21 /26 /28 /121 /124 /129)
	FR406	High Tg	/21 /24 /26
<a href="#">Isola</a>	FR406HR	Lead Free (No phenolics)	/21 /24 /26 /28 /121
	370HR	Lead free, Low CTE	/26 (/21 /24 /98 /99 /101 /126)
<a href="#">Nelco</a>	GETEK	Low Dk Df, 175 C Tg, for High speed	/25
	A11	PrePreg, No-Flo, heat sink bonding, die cavity boards	/20
	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	MIL-R-9300B Type II
	NP511	Unclad G10	MIL-I-24768/3
<a href="#">Norplex-Micarta</a>	RT/duroid 5880	PTFE	IPC-4103/03/04
	6002	PTFE	
<a href="#">Rogers</a>	4003C	Hydrocarbon Ceramic	IPC-4103 /10
	4230	Hydrocarbon Ceramic	
	4232	Halogen free, Antenna grade	
	4350B	Hydrocarbon Ceramic	IPC-4103 /11
	4403	Hydrocarbon Ceramic	
	4450B	Hydrocarbon Ceramic	IPC-4103 /11
	4450F	Hydrocarbon Ceramic	IPC-4103 /11

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) coverage to 1.5 mils Electroless Ni Imm. Gold (ENIG) 120-250 uln Ni, 2-8 uln Au



11126 Bren Road West  
 Minnetonka, Minnesota U.S.A 55343  
 www.HOLADAY.com

Tel 952.933.3303  
 Sales Fx 952.933.2383  
 Purchasing Fx 952.988.8096

Subcontract	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	
	Carbon Ink	<a href="#">Minico Ink</a>
	Selective Finishes	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	

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	LPI
	LDI-4000	colors (Black, Blue, Clear, Red, White, and Yellow Semi-Gloss) 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 EMP 110	3 - 4 mils thick Carapace Family, Green (Black, Blue, Red, Yellow)	Photopolymer Dry Film LPI



11126 Bren Road West  
 Minnetonka, Minnesota U.S.A 55343  
 www.HOLADAY.com

Tel 952.933.3303  
 Sales Fx 952.933.2383  
 Purchasing Fx 952.988.8096

<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

Metal Cores	Product	Description	Type
<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
	Copper Aluminum Laminate Composite  Composite / Laminate / CuFilled / Milled		