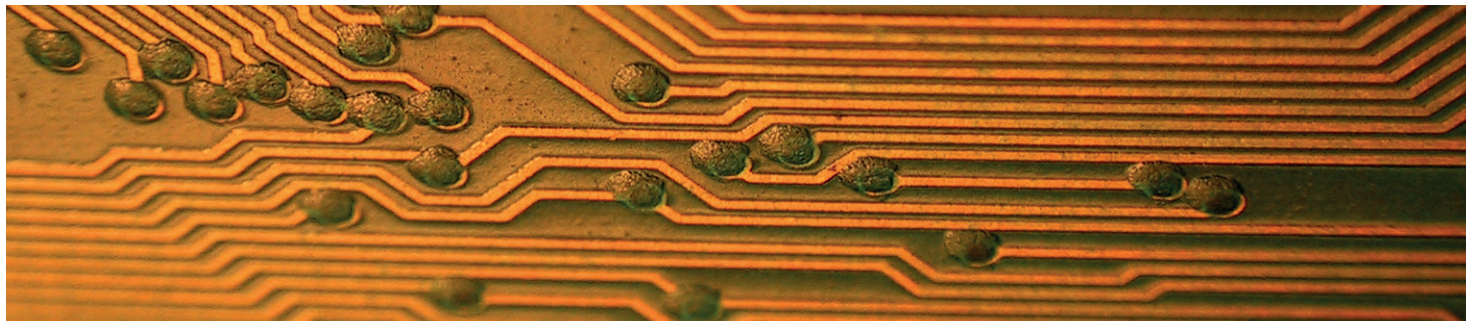




# PPG Electronic Materials (Spraylat) Conductive Coatings



Pexa has been the authorised distributor for Spraylat Conductive Coatings for over 10 years. Recently acquired by PPG, Spraylat manufactures a complete range of conductive coatings for EM and RF shielding, electrostatic discharge and lightning protection.

Conductive formulations based on silver and copper and hybrids of the two permit a range of properties to be delivered offering tailor made conductivity and cost per unit coated. Pexa is fully capable of delivering a complete package of product recommendation and application support.

## Applications

Electronics enclosures made from plastic have no natural conductivity. They can be coated with conductive coatings to form a shield to EM/RF interference or to conduct current for other purposes. Typical applications include telecoms equipment, bar code readers, in car entertainment systems, cash machines, PCs, medical equipment & avionics.

## Key Products

**Safe-on-Substrate 599B-series.** These products are based on mild, alcohol solvents which are compatible with most plastics without causing cracking or other damage.

**599Z-series.** These products are water based, offering similar properties to the SoS 599B-series but with the additional advantage of lower VOC emissions.

## Performance

**RoHS.** All products are tested and certified for compliance with the EU directive 95/2002 on the disposal of end of life equipment. The products are certified free from – Lead, Mercury, Cadmium, Hexavalent Chromium, Polybrominated biphenyls and Polybrominated diphenyl ether.

**Electrical Conductivity/Resistivity.** This is measured in Ohms either as Ohms/square using a square test probe or “point to point” using two probes placed a set distance apart. The PPG Electronic Materials products offer excellent characteristics in both regards with conductivity manageable down to less than 0.01 Ohms.

**EM/RF Shielding.** This is the capability of the coating to attenuate electromagnetic radiation from one side of the coating to the other. This allows plastic enclosures to perform as well as metal ones in shielding performance. Attenuation between 71 – 90 dB can be managed depending on the frequency.

## Underwriters' Laboratory

Underwriter's Laboratory (UL) is an independent product testing organisation; it offers more than 1000 standards for safety. UL certification is frequently required as part of product certification. Products are approved in a combination of substrate and coating, PPG Electronic Materials products are UL qualified on a wide range of substrates.



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## Key Performance and Specification Data

Selection of Typical Products in Range		
Product Code	Composition	Typical Range of Film Thickness microns (μ)
<b>Spraylat 599B Safe-on-Substrate Series</b>		
599B3755	Copper	12.5-25.0
599B3740	Hybrid	7.5-17.5
599B3730	Silver	5.0-12.5
<b>Spraylat 599Z Series</b>		
559Z6261	Copper	12.5-37.5
559Z6103	Hybrid	12.5-25.0
559Z6098	Silver	12.5-15.0

Selection of Typical Products in Range				
Product Code	Type	Pigmentation	Typical layer thickness for optimal performance (μ)	Typical resistivity Ohms/square
599B3755	Solvent based	Copper	12.5 - 25.0	0.01 - 0.018
599B3740	Solvent based	Hybrid	7.5 - 17.5	0.006 - 0.008
599B3730	Solvent based	Silver	5.0 - 12.5	0.002 - 0.003
599Z6103	Water based	Copper	12.5 - 25.0	0.015 - 0.02
599Z6098	Water based	Hybrid	12.5 - 25.0	0.01 - 0.014
599Z3000	Water based	Silver	12.5 - 25.0	0.02 - 0.03

Point to point Spraylat 599B Safe-on-Substrate series representative results							
	Copper		Hybrid		Silver		
	mid-distance	corner-corner	mid-distance	corner-corner	mid-distance	corner-corner	
Mobile phone housing 1	.180 to 0.200	.200 to .240	.09 to .110	.120 to .140	.080 to .100	.100 to .120	milli-O hms mΩ
Mobile phone housing 2	.100 to .130	.170 to .200	.110 to .130	.160 to .200	.100 to .120	.120 to .160	
Spraylat 599Z water based series offers similar performance							

Ohms per square results			
Product	0.01	0.02	0.03
599B3730			
599B3740			
599B3755			
599Z6098			
599Z6103			
599Z6261			
Shaded bar represents a range of results			

EMI Shielding Properties			
Co-Axial Transmission Line Test ASTM D4935-89			
Spraylat 599B Safe-on-Substrate Series results			
MhZ	Copper 20μ	Hybrid 15μ	Silver 17.5μ
30	90	74	90
50	88	74	92
100	85	78	92
300	78	73	78
500	80	72	78
700	79	72	78
1000	78	71	86
1500	77	71	86
Testing to Mil Std 285 yields similar results			

dB

Snapshot selection of UL Certifications	
Product	Plastic Substrate
599B3314	GE Plastics Cyclopol variants
599B3314	Bayer Bayblend variants
599B3314	Asahi VA variants
599B3755	Mitsubishi Eng. MB variants
599B3755	Teijin Multilon
599Z6103	GE Lexan variants
599Z6103	Bayer FR variants



Pexa is a supplier of high technology materials to the aerospace, defence, electronics and energy industries. We are trusted partners of brand leading industrial product manufacturers; we employ progressive supply chain systems to deliver our promises. Our mission is to assist our customers to meet their own business objectives using our products and services; these products include surface finishing materials, aircraft maintenance products, application equipment and unique packaging solutions.

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