Rigid Printed Circuit Surface Finish Selection Chart

Properties	OSP[1]	HAL[2]	Immersion Ni/Au[3]	Immersion Ag	Immersion Sn	Immersion Ni/Pd/Au[4]	Thick gold
Production							
Process Effort	low	medium	medium	medium	medium	medium	high
Planarity	yes	no	yes	yes	yes	yes	yes
Thickness indication	0,2µm	3-25µm	Ni 3–5µm Au 0,05µm	Ag 0,125 – 0,65µm	1µm	Ni 3–5µm Pd 0,2-0,5µm Au 0,05µm	Au 0,7–0,9µm
Application							
Rigid	yes	yes	yes	yes	yes	yes	yes
Flex	yes	yes	restricted[5]	yes	yes	restricted[4]	restricted[4]
Flex-rigid	not preferred	yes	yes	yes	yes	yes	yes
Wire Bonding	no	no	yes	no	no	yes	yes
Press fit	yes	yes	restricted[6]	yes	yes	restricted[5]	restricted[5]
Fine pitch	yes	not preferred	yes	yes	yes	yes	yes
Multiple Solderability	restricted	yes	yes	yes	yes	yes	yes
Cost	+	+	+/-	+	+	-	-
Shelf life[7]	3 months	12 months	12 months	6 months	6 months	12 months	12 months
Refresh of surface	yes	yes	no	no	yes	no	no

1 OSP Organic Surface Protection (ENTEK)
2 HAL Hot Air Levelling, Pb Free (Optional non PB Free HAL)
3 Immersion Nickel Gold, ENIG
4 Immersion Nickel Palladium Gold, ENEPIG
5 Stiffener to be used to avoid excessive stress on the surface finish due to bending
6 Only in combination with suitable connector, check connector documentation
7 Storage under the following conditions assumed: Original sealed packaging; Temperature 20-24°C, Relative Humidity 30-40%

Disclaimer: All information is provided on an as is basis. Although Q.P.I. Group B.V. has done it utmost to have this information complete and correct, Q.P.I. Group B.V. cannot be held responsible for any incorrect and/or incomplete information. Q.P.I. Group B.V. can never be held responsible for any damages resulting from the use of this information. Q.P.I. Group B.V. has the right to alter this information at any time without notice.

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