PHP-900 IR-6P

PERMANENT HOLE PLUGGING INK

umicore
Metal Deposition Solutions

TECHNICAL SPECIFICATIONS

All technical data is taken from information from the manufacturer San-Ei Kagaku Co, Ltd., Japan.

Material Properties		
Item	**Data**	**Notes**
Viscosity	35±5 Pa・s	VISCOTESTER VT-04, 25 °C
Particle size	Less than 15 micron	JIS K5600-2-5
Density	1.66	JIS K5600-2-4
Shelf life	3 months	Below 5 °C
Pot life	7 days	at 25 °C, 60 % RH
Halogen free	Total Cl: Less than 900 ppm Total Br: Less than 900 ppm Total Cl+ Br: Less than 1500 ppm	JPCA-ES01-2003
RoHS standard	Passed	Cd, Pb, Hg, Cr6+, PBBs, PBDEs
Cure condition	140 °C, 30 min (for PCB), 110 °C, 60 min + 150 °C, 30 min (for FCPKG)	Box type oven

Thermal Properties		
Item	**Data**	**Notes**
Tg	168 °C	TMA, JPCA-BU01-1998
α1	39 ppm	TMA, JPCA-BU01-1998
α2	105 ppm	TMA, JPCA-BU01-1998
Young’s modulus	5200 MPa	DMA, 30 °C
Tensile strength	28 MPa	JIS K7113, 23 °C
Elongation	0.5 %	JIS K7113, 23 °C
Tensile modulus	7.96 GPa	JIS K7113, 23 °C
Passion's ratio	0.325	JIS K7113, 23 °C
Specific heat	1055 J/kg・K	JIS K7123, 23 °C
Thermal conductivity	0.54 W/mK	Laser flash method

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	Heat Resistance	
Item	**Data**	**Notes**
Solderability	No blister, no crack	288 °C, 60 sec
Heat cycle	No blister, no crack	288 °C, 10 sec, 5 cycles
1 % weight loss temperature	335 °C	TG/DTA
Thermal shock	No blister, no crack	-40 °C to 85 °C, 30 min, 5 cycles
Dry heat	No blister, no crack	85 °C, 500 hrs
Humidity	No blister, no crack	40 °C, 95 % RH, 500 hrs
Thermal cycle	No blister, no crack	-65 °C to 125 °C, 1000 cycles
PCT	No blister, no crack	121 °C, 100 % RH, 168 hrs
Peel strength	6.5 N/cm	Cu plating thickness: 20 micron

	Chemical Properties	
Item	**Data**	**Notes**
Water absorption	0.23 %	JIS C6481
Resistance to chemicals		
10 wt% Sulfuric acid	No blister, no crack	RT, 60 min
10 wt% Caustic soda	No blister, no crack	RT, 60 min
IPA	No blister, no crack	RT, 60 min
Dichloromethane	No blister, no crack	RT, 60 min
Acetone	No blister, no crack	RT, 60 min
Boiling water	No blister, no crack	100 °C, 60 min

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Electrical Properties		
Item	Data	Notes
Dielectric constant	5.08 4.4 4.4 4.4 4.5	IPC-TM-650 TM.2.5.5.1/ASTM-D150, 1 MHz ASTM D2520, 1 GHz ASTM D2520, 3 GHz ASTM D2520, 5 GHz ASTM D2520, 11 GHz
Dissipation factor	0.0237 0.02 0.018 0.02 0.02	IPC-TM-650 TM.2.5.5.1/ASTM-D150, 1 MHz ASTM D2520, 1 GHz ASTM D2520, 3 GHz ASTM D2520, 5 GHz ASTM D2520, 11 GHz
Surface resistivity	$1.9 \times 10^{16} \Omega$	ASTM D257
Volume resistivity	$4.9 \times 10^{13} \Omega / \cdot \mathrm{cm}$	ASTM D257
Breakdown voltage	60.0 KV/mm	ASTM D149

ANSPRECHPARTNER

Sie haben tiefergehende Fragen oder wünschen eine unverbindliche Angebotskalkulation?
Unsere Fachleute helfen Ihnen, natürlich auch bei technischen Fragen, gerne weiter.

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