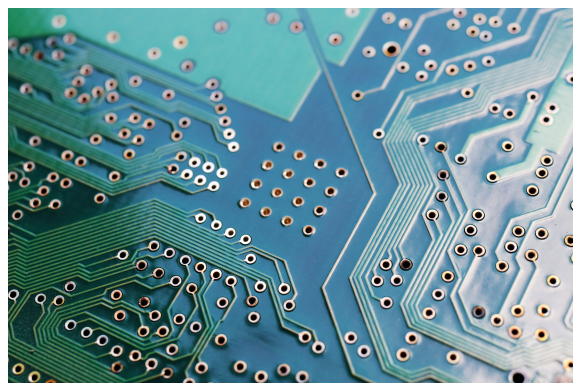


PHP-900 IR-10FH

Permanent hole plugging ink

Official sales start on 01.07.2022



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

Material Properties		
Item	Data	Notes
Viscosity	40±5 Pa·s	VISCONTESER VT-04, 25 °C
Particle size	Less than 15 micron	JIS K5600-2-5
Density	1.73	JIS K5600-2-4
Shelf life	4 months	Below 10 °C
Pot life	7 days	at 25 °C
Halogen content	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	110 °C, 60 min + 150 °C, 30 min	Box type oven

Thermal Properties

Item	Data	Notes
Tg	161 °C	TMA, JPCA-BU01-1998
β1	36 ppm	TMA, JPCA-BU01-1998
β2	88 ppm	TMA, JPCA-BU01-1998
Young's modulus	7700 MPa	DMA, 30 °C
Tensile strength	49 MPa	JIS K7113, 23 °C
Elongation	0.9 %	JIS K7113, 23 °C
Tensile modulus	9.56 GPa	JIS K7113, 23 °C
Passion's ratio	0.331	JIS K7113, 23 °C
Thermal conductivity	0.642 W/mK	Laser flash method

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	360 °C	TG/DTA
Peel strength	>9 N/cm	Cu plating thickness: 20 µm

Chemical Properties

Item	Data	Notes
Water absorption	0.19 %	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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