

DIC-PPS for Connectors

Dainippon Ink & Chemicals, Inc.
Engineering Plastics Division

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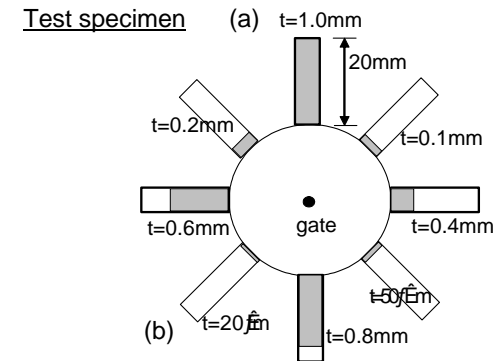
- EUL V-0 with No Flame-Retardants
- EExcellent Flow & Low Flash *FZ-2140-D9*
- EHigh Heat Resistance for Lead Free Soldering Reflow Process *Exp. No. PS-107-1578*

Products and Characters

	PPS GF40%		PPS/PA6T-Alloy GF40%	
Cross-linked type PPS based	General Purpose FZ-1140 Flow Length=50cm Flash Length=0.21mm Injection Press.=45MPa	Toughness, Low Flash FZ-1140-D5 Flow Length=45cm Flash Length=0.13mm Injection Press.=47MPa		
			Excellent Flow Low Flash	High Heat Resistance for Lead Free Soldering Reflow Process Low Flash
Linear type PPS based	General Purpose FZ-2140 Flow Length=45cm Flash Length=0.15mm Injection Press.=48MPa	Toughness, Low Flash FZ-2140-D5 Flow Length=48cm Flash Length=0.09mm Injection Press.=44MPa	FZ-2140-D9 Flow Length=62cm Flash Length=0.07mm Injection Press.=33MPa	PS-107-1578 Flow Length=50cm Flash Length=0.12mm Injection Press.=45MPa

Measuring Conditions

- Flow Length F Cylinder Temp.=330°C Mold Temp.=150°C t=1.6mm
- Injection Pressure and Flash Length
Test specimen : Multi bar-flow specimen shown right.
Molding conditions : Cylinder Temp.=330°C Mold Temp.=140°C Injection speed=20mm/sec
- Injection Pressure : Minimum hold pressure which is necessary to fill 1mm-t bar(a).
- Flash Length : Measured bar flow length at the 20micron-t bar(b) under hold pressure which is 10% of Injection Pressure



DIC-PPS Properties

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Type			GF40%PPS					PPS/PA6T Alloy GF40%
Grade			FZ-1140	FZ-1140-D5	FZ-2140	FZ-2140-D5	FZ-2140-D9	PS-107-1578
Properties			General Purpose Cross-Linked	Low Flash Cross-Linked	General Purpose Linear	Toughness Low Flash Linear	High Flow Low Flash Linear	High Heat Resistance Low Flash Linear
PPS Type								
	Method	Ut						
Physical								
Specific gravity	ASTM D792	-	1.66	1.66	1.66	1.66	1.66	1.63
Water absorption, 23°C/24hr	ASTM D570	wt. %	0.02	0.02	0.02	0.02	0.02	0.05
Mold shrinkage, MD/TD*1	ASTM D955	%	0.25/1.1	0.25/1.1	0.25/1.1	0.25/1.1	0.25/1.1	0.5/1.1
Mechanical								
Tensile strength	ASTM D638	MPa	180	190	180	185	180	170
Tensile elongation at break	ASTM D638	%	1.7	1.8	1.8	2.0	1.8	1.8
Flexural strength	ASTM D790	MPa	265	270	270	280	270	260
Flexural modulus	ASTM D790	MPa	13500	13500	13000	13000	13000	13000
Flexural elongation at break	ASTM D790	%	2.5	2.5	2.5	2.7	2.5	2.4
Impact strength	ASTM D790							
notched	ASTM D256	J/m	100	100	100	100	100	100
unnotched	ASTM D256	J/m	500	600	550	600	550	500
Maximum insert pin diameter *2	own method	mm	1.625	1.640	1.670	1.685	1.675	1.760
Thermal								
Deflection temp. under load, 1.82MPa	ASTM D648	°C	265	265	265	265	265	265
Co-eff. of thermal expansion (-30~100 °C)	ASTM D696	m/mK	2.2~10 ⁻⁵	2.2~10 ⁻⁵	2.2~10 ⁻⁵	2.2~10 ⁻⁵	2.2~10 ⁻⁵	2.2~10 ⁻⁵
Flammability (t=0.8mm)	U-94	-	✓0	✓0	✓0	✓0	✓0	✓0 ³
Maximum temp. in reflow processing*4	own method	°C	279	279	279	279	279	291
Electrical								
Dielectric strength (t=1.6mm)	ASTM D149	kV/mm	16	16	16	16	16	16
Volume resistivity	ASTM D257	Ωcm	10 ¹⁶	10 ¹⁶	10 ¹⁶	10 ¹⁶	10 ¹⁶	10 ¹⁶
Molding								
Flow length*5	own method	cm	50	45	45	48	62	50
Flash length*6	own method	mm	0.21	0.13	0.15	0.09	0.07	0.12
Minimum injection press. (t=1.0mm)*7	own method	MPa	45	47	48	44	33	45
Processing Conditions								
Cylinder temperature		°C	300-340	300-340	300-340	300-340	300-340	320-340
Mold temperature		°C	120-150	120-150	120-150	120-150	120-150	120-150

*1 MD;Mold Direction, TD;Transverse Direction

*2 With which 1.5mm-φ hole on the 2mm-t test specimen is not cracked.

*3 Own Data

*4 See P.2

*5 See P.1

*6 See P.1

*7 See P.1

