

Polyphenylene Sulfide (PPS)

DURAFIDE®

1130T6

HD9050

Special

POLYPLASTICS CO., LTD.



General Properties of 1130T6

table1-1 General Properties (ISO)

Item	Unit	Test Method	Special
			1130T6
			High Impact
Color			HD9050
ISO(JIS)quality-of-the-material display:		ISO11469 (JIS K6999)	>PPS-I-GF30<
Density	g/cm ³	ISO 1183	1.52
Water absorption (23°C,24hrs,1mmt)	%	ISO 62	0.06
Melt viscosity (310°C,1000/sec)	Pa·s	ISO 11443	400
Tensile strength	MPa	ISO 527-1,2	155
Strain at break	%	ISO 527-1,2	2.3
Flexural strength	MPa	ISO 178	220
Flexural modulus	MPa	ISO 178	8,800
Charpy notched impact strength (23°C)	kJ/m ²	ISO 179/1eA	12
Temperature of deflection under load (1.8MPa)	°C	ISO 75-1,2	255
Coefficient of linear thermal expansion (Normal temperature, Flow direction)	x10 ⁻⁵ /°C	Our standard	2
Coefficient of linear thermal expansion (Normal temperature, Transverse direction)	x10 ⁻⁵ /°C	Our standard	4
Electric strength (3mmt)	kV/mm	IEC 60243-1	18
Volume resistivity	Ω·cm	IEC 60093	8 × 10 ¹⁵
Volume resistivity (Our standard)	Ω·cm		-
Relative permittivity (1kHz)		IEC 60250	3.9
Relative permittivity (1MHz)		IEC 60250	3.9
Dielectric dissipation factor (1kHz)		IEC 60250	0.003
Dielectric dissipation factor (1MHz)		IEC 60250	0.004
Relative permittivity (2GHz)		Cavity resonator method	-
Dielectric dissipation factor (2GH z)		Cavity resonator method	-
Tracking resistance (CTI)	V	IEC 60112	125
Arc resistance	s	ASTM D495	123
Rockwell hardness	M(Scale)	ISO2039-2	85
Flammability		UL94	V-0 (1.6mm)
The yellow card File No.			E109088
Appropriate List number of Ministerial Ordinance for Export Trade Control			Item 16 of Appendix -1



All figures in the table are the typical values of the material and not the minimum values of the material specifications.



1. Characteristics

1130T6 is glass fiber 30% reinforced and PPS/elastomer alloy grade. It has been developed to improve toughness and heat shock resistance.

2. Weld Property

1130T6 has higher elongation and it also shows higher weld elongation.

(Table 2-1) Weld strength

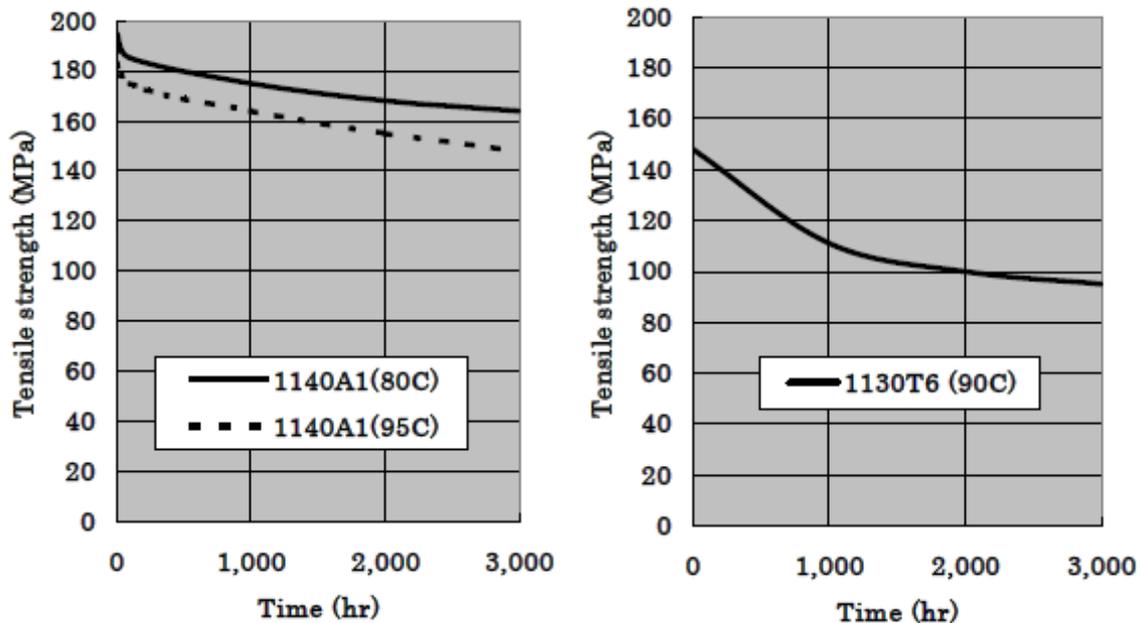
Property	Unit	1130T6 (GF30%)	Competitive Tough PPS (GF30%)
Tensile strength	MPa	70	50
Tensile elongation	%	0.9	0.5

3. Long Term Mechanical Properties

3-1) Hot Water Resistance (Hydrolysis Resistance)

1130T6 show excellent hot water resistance because PPS resin is not hydrolyzed. So, these grades are the most suitable for faucet parts.

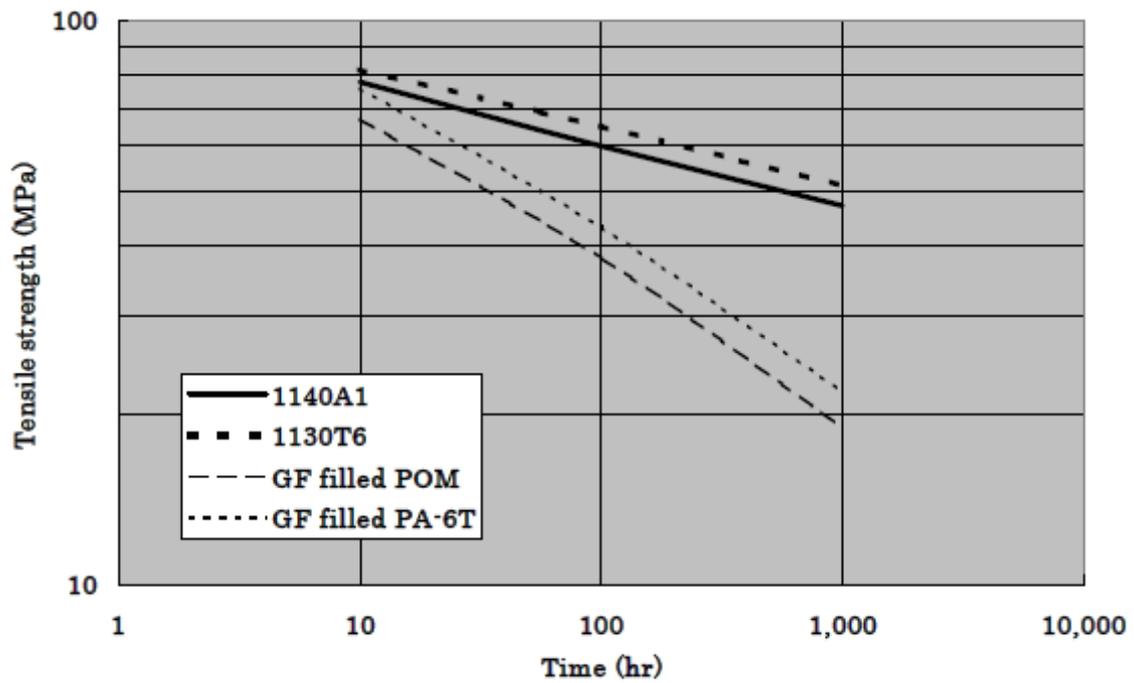
(Figure 3-1) Hot water resistance of 1130T6



3-2) Creep Resistance in Hot Water

1130T6 has also excellent creep resistance in hot water compared with other GF filled materials.

(Figure 3-2) Tensile creep fracture curve in 80 °C hot water



4. Heat Shock Resistance

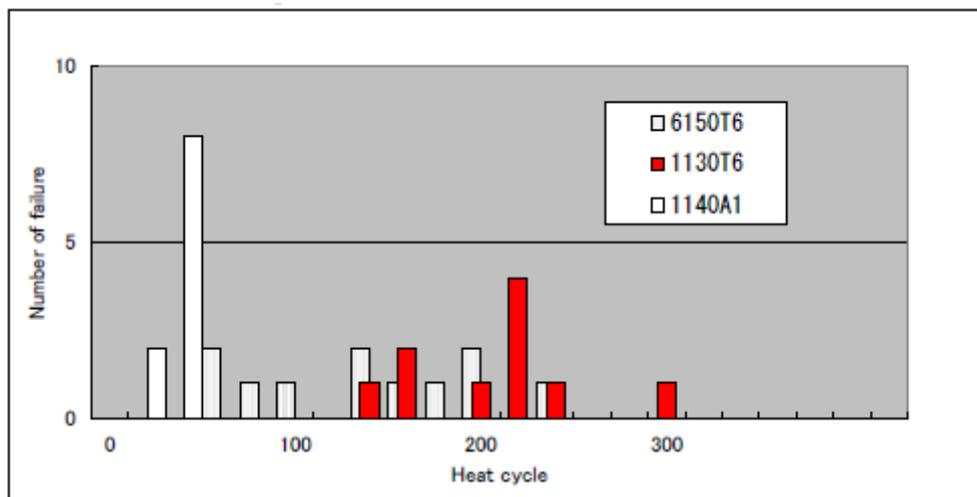
1130T6 has extremely high heat shock to optimize the additional amount of glass fiber and impact modifier.

(Table 4-1) Heat Shock Resistance

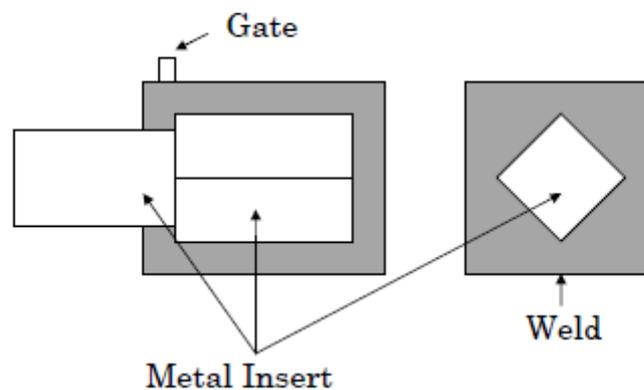
	6150T6	1130T6	1140A1
Cycle to heat shock rupture	150	200	30

Unit:Cycle

(Figure 4-1) Heat Shock Resistance



(Shape of Test Piece)



(Evaluation Method)

Heat cycle conditoin: $-40^{\circ}\text{C}(2\text{HR}) \longleftrightarrow 180^{\circ}\text{C}(2\text{HR})$

Evaluation : Watch samples once 20cycle (n=10)



5. Thermal Properties

5-1) Coefficient of Linear Thermal Expansion

(Table 5-1) Coefficient of Linear Thermal Expansion

Unit: $\times 10^{-5}/^{\circ}\text{C}$

Grade		1130T6	
Direction		Flow direction	Transverse direction
Temperature ($^{\circ}\text{C}$)	-30	1.78	5.07
	0	1.69	5.08
	50	1.62	4.81
	100	1.70	6.39
	150	1.50	7.86
	200	1.40	8.00

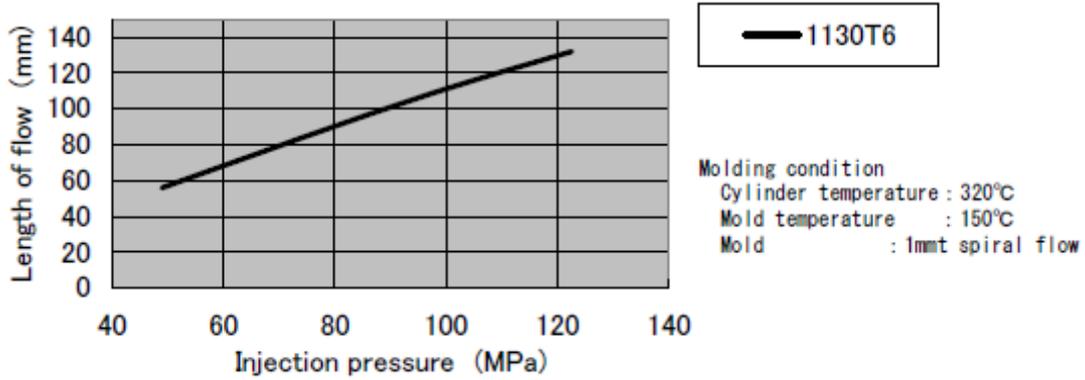
Standard temperature: 20°C



6. Molding Properties

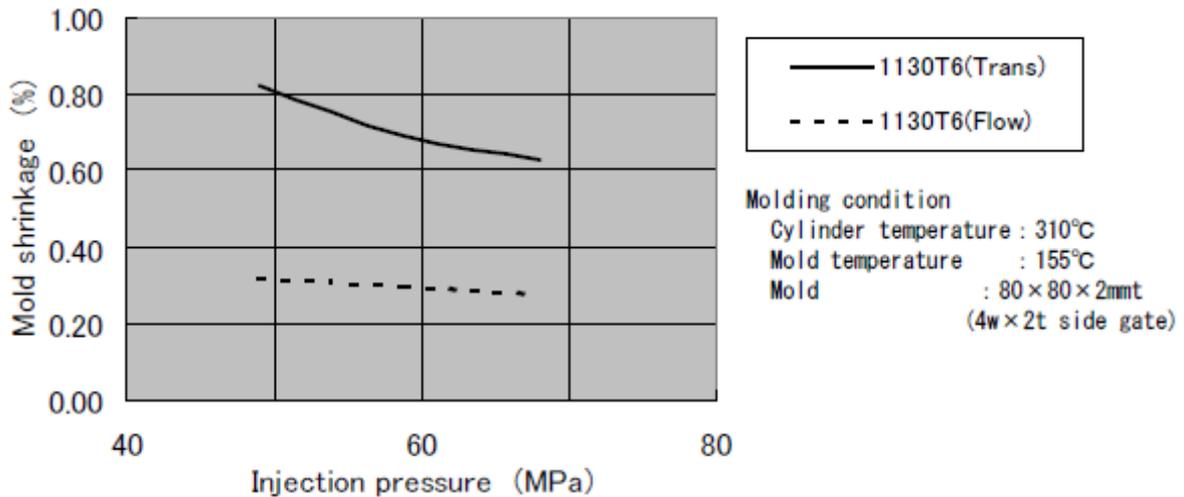
6-1) Flowability

(Figure 6-1) Flowability (1mmt)



6-2) Mold Shrinkage

(Figure 6-2) Mold Shrinkage(80□×2mmt)



NOTES TO USERS

- All property values shown in this brochure are the typical values obtained under conditions prescribed by applicable standards and test methods.
- This brochure has been prepared based on our own experiences and laboratory test data, and therefore all data shown here are not always applicable to parts used under different conditions. We do not guarantee that these data are directly applicable to the application conditions of users and we ask each user to make his own decision on the application.
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