

Polyphenylene Sulfide (PPS)

**DURAFIDE®**

6165A7

HF2000/HD9100

GF and Mineral  
Reinforced

# General Properties of 6165A7

table1-1 General Properties (ISO)

Item	Unit	Test Method	GF and Mineral Reinforced
			6165A7
			Dimensionally Precise, Low Flash
Color			HF2000/HD9100
ISO(JIS)quality-of-the-material display:		ISO11469 (JIS K6999)	>PPS-(GF+MD)60<
Density	g/cm <sup>3</sup>	ISO 1183	1.89
Water absorption (23°C,24hrs,1mmt)	%	ISO 62	0.01
Melt viscosity (310°C,1000/sec)	Pa·s	ISO 11443	290
Tensile strength	MPa	ISO 527-1,2	165
Strain at break	%	ISO 527-1,2	1.2
Flexural strength	MPa	ISO 178	250
Flexural modulus	MPa	ISO 178	19,600
Charpy notched impact strength (23°C)	kJ/m <sup>2</sup>	ISO 179/1eA	8.0
Temperature of deflection under load (1.8MPa)	°C	ISO 75-1,2	270
Coefficient of linear thermal expansion (Normal temperature, Flow direction)	x10 <sup>-5</sup> /°C	Our standard	1
Coefficient of linear thermal expansion (Normal temperature, Transverse direction)	x10 <sup>-5</sup> /°C	Our standard	3
Electric strength (3mmt)	kV/mm	IEC 60243-1	14
Volume resistivity	Ω·cm	IEC 60093	2 × 10 <sup>15</sup>
Volume resistivity (Our standard)	Ω·cm		-
Relative permittivity (1kHz)		IEC 60250	5.3
Relative permittivity (1MHz)		IEC 60250	5.4
Dielectric dissipation factor (1kHz)		IEC 60250	0.001
Dielectric dissipation factor (1MHz)		IEC 60250	0.002
Tracking resistance (CTI)	V	IEC 60112	175
Arc resistance	s	ASTM D495	173
Rockwell hardness	M(Scale)	ISO2039-2	105
Flammability		UL94	V-0
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

6165A7 is the improvement grade in the following characteristics based on 6165A4.

- ① Higher mechanical properties than GF 40% reinforced crosslinking PPS grade.
- ② Low flash
- ③ High flow

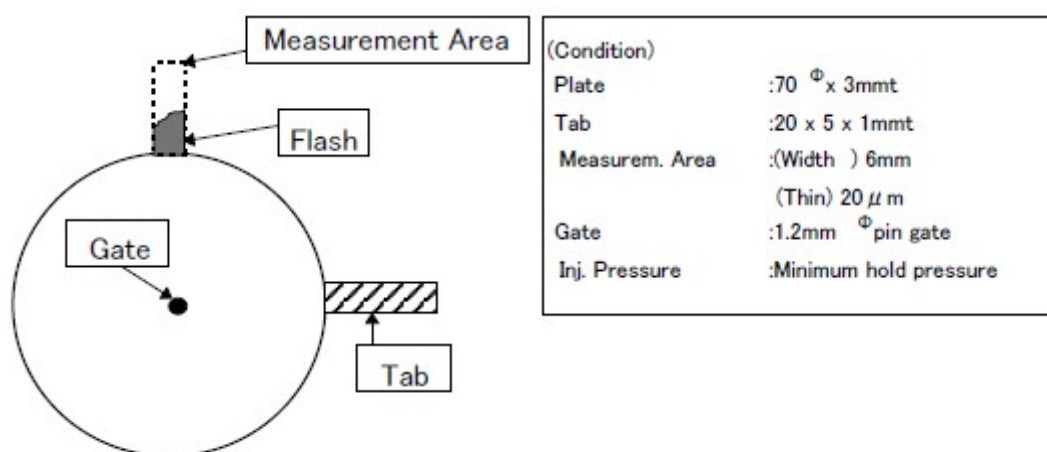
## 2. Flash Property

- Generally, it is pointed out that the flash of PPS resin is longer than other resin.
- **6165A7** is improved the flash property by controlling the flowability of the polymer.

(Table 2-1) Flash Property

Property	Unit	Method	6165A7 (HF2000)	6165A4 (HF2000)
Flash length	$\mu\text{m}$	(PPC)	60	120
Melt viscosity	$\text{Pa}\cdot\text{s}$	(PPC)	260	350

### <Test Method of PPS Flash Property>



### 3. Thermal Properties

#### 3-1) Coefficient of Linear Thermal Expansion

(Table 3-1) Coefficient of Linear Thermal Expansion

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

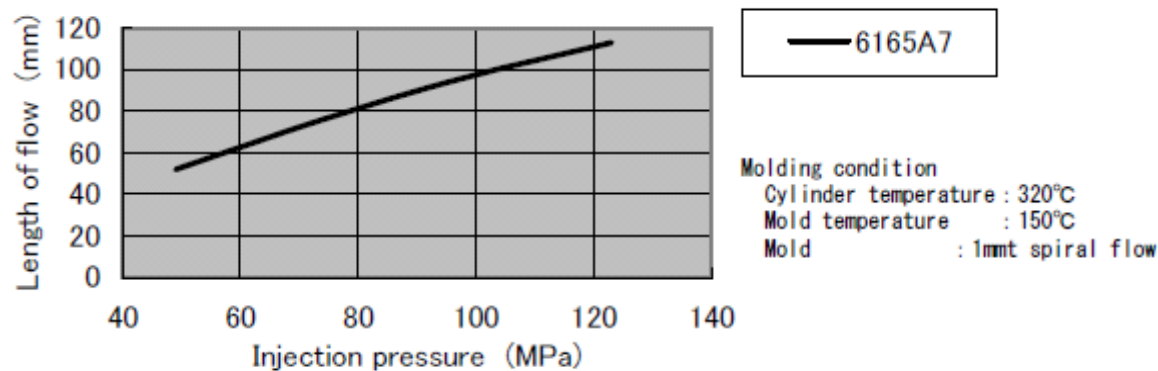
Grade		6165A7	
Direction		Flow direction	Transverse direction
Temperature ( $^{\circ}\text{C}$ )	-30	1.3	2.5
	0	1.3	2.6
	50	1.2	2.7
	100	1.3	3.1
	150	1.4	4.0
	200	1.3	4.6

Standard temperature:  $20^{\circ}\text{C}$

## 4. Molding Properties

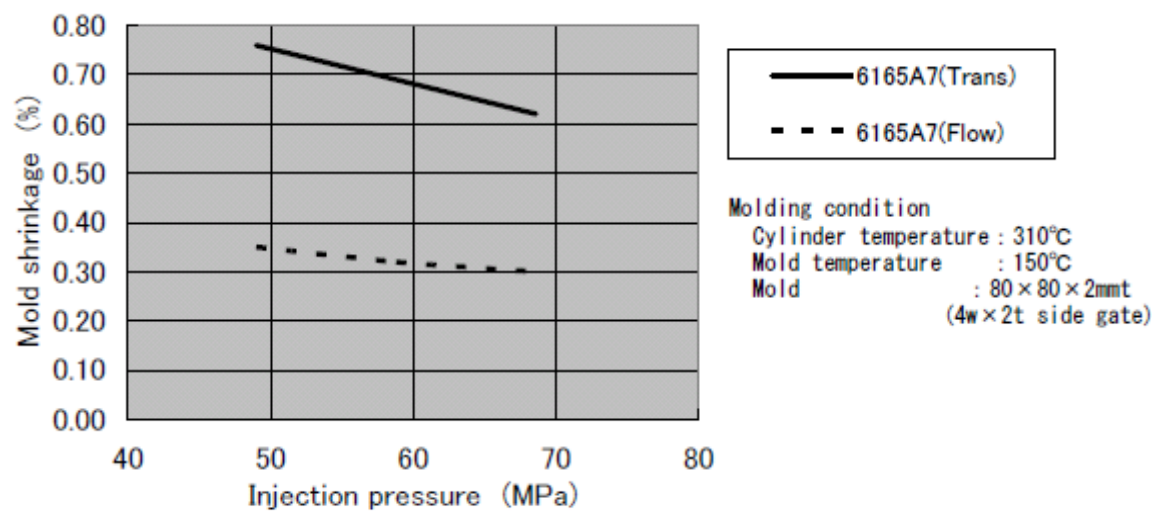
### 4-1) Flowability

(Figure 4-1) Flowability (1mmt)



### 4-2) Mold Shrinkage

(Figure 5-2) 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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- For safe handling of materials we supply, it is advised to refer to the Safety Data Sheet "SDS" of the proper material.
- This brochure is edited based on reference literature, information and data available to us at the time of creation. The contents of this brochure are subject to change without notice upon achievement of new data.
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