

Polyphenylene Sulfide (PPS)

DURAFIDE®

1140A64

HF2000/HD9100

GF Reinforced

General Properties of 1140A64

table1-1 General Properties (ISO)

Item	Unit	Test Method	GF Reinforced
			1140A64
			Standard, Low Flash
Color			HF2000/HD9100
ISO(JIS)quality-of-the-material display:		ISO11469 (JIS K6999)	>PPS-GF40<
Density	g/cm ³	ISO 1183	1.66
Water absorption (23°C,24hrs,1mmt)	%	ISO 62	0.04
Melt viscosity (310°C,1000/sec)	Pa·s	ISO 11443	240
Tensile strength	MPa	ISO 527-1,2	200
Strain at break	%	ISO 527-1,2	1.8
Flexural strength	MPa	ISO 178	300
Flexural modulus	MPa	ISO 178	15,000
Charpy notched impact strength (23°C)	kJ/m ²	ISO 179/1eA	10
Temperature of deflection under load (1.8MPa)	°C	ISO 75-1,2	270
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	16
Volume resistivity	Ω·cm	IEC 60093	4 × 10 ¹⁶
Volume resistivity (Our standard)	Ω·cm		-
Relative permittivity (1kHz)		IEC 60250	4.5
Relative permittivity (1MHz)		IEC 60250	4.5
Dielectric dissipation factor (1kHz)		IEC 60250	0.001
Dielectric dissipation factor (1MHz)		IEC 60250	0.002
Tracking resistance (CTI)	V	IEC 60112	150
Arc resistance	s	ASTM D495	123
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

1140A64 is improvement grade in the following characteristics to keep high strength and toughness of 1140A6.

- ① Low flash
- ② Low corrosion

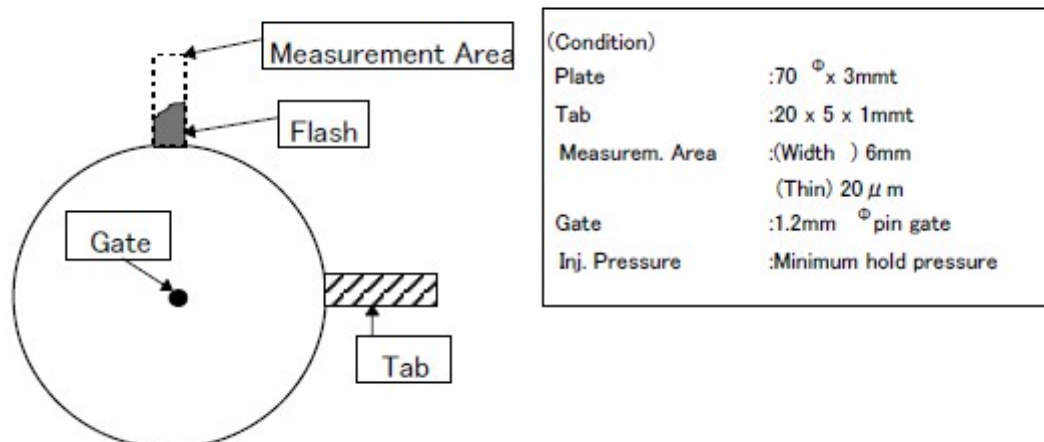
2. Flash property

- Generally, It is pointed out that the flash of PPS resin is longer than that of other resin.
- 1140A64 is improved the flash property by controlling the flowability of the polymer.

(Table 2-1) Flash Property

Property	Unit	Method	1140A64 (HF2000)	1140A6 (HF2000)	1140A1 (HF2000)
Flash length	μm	(PPC)	50	80	120
Melt viscosity	$\text{Pa}\cdot\text{s}$	ISO11443	240	260	380

<Test Method of PPS Flash Property>



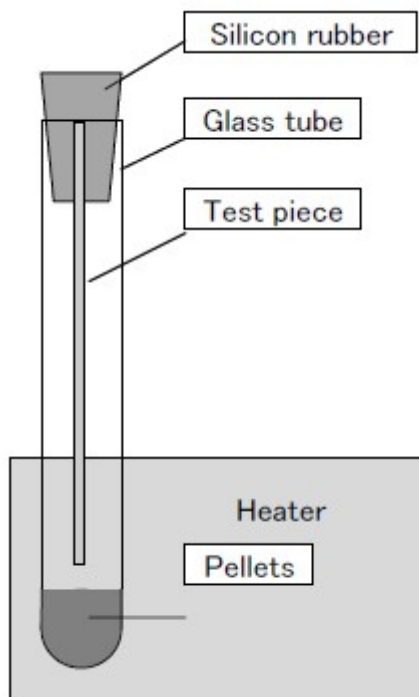
3. Mold Corrosion Property

- Considering a small amount of corrosive gas which contains sulfur or chlorine to be generated when molding, there is a possibility that it bites the barrel or screw of molding machine.
- 1140A64 is improved the mold corrosion property because of containing additive.

(Table 3-1) Mold Corrosion Property

Property	Unit	Method	1140A64 (HF2000)	1140A6 (HF2000)	1140A1 (HF2000)
Mold Corrosion	-	(PPC)	A	C	C

<Test Method of PPS Mold Corrosion>



(Condition)
Test piece :SKD-11
Pre-drying :140 C x 3hrs
Heating :350 C x 3hrs
Atmosphere :Air
Treatment:After heating, keep the test piece
under 23 C x 95%RH for 24hrs.
Judgement :
(better) A B C D E (poor)

4. Thermal Properties

4-1) Coefficient of Linear Thermal Expansion

(Table 4-1) Coefficient of Linear Thermal Expansion

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

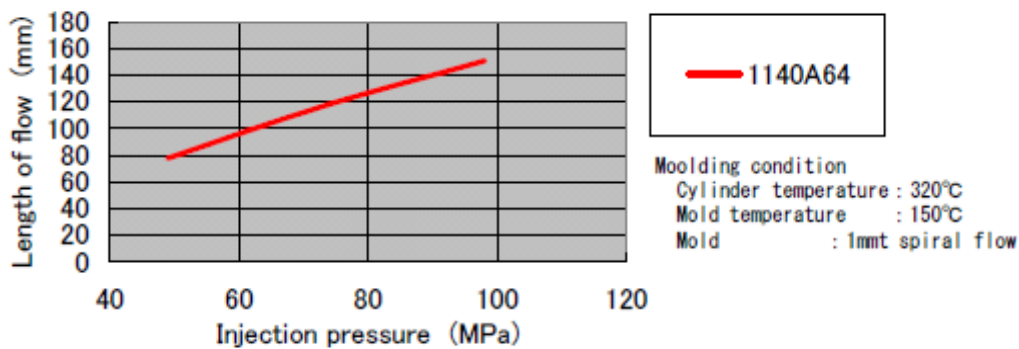
Grade		1140A64	
Direction		Flow direction	Transverse direction
Temperature ($^{\circ}\text{C}$)	-30	1.3	3.6
	0	1.4	3.8
	50	1.3	4.0
	100	1.0	4.4
	150	1.0	5.9
	200	1.0	6.3

Standard temperature: 20°C

5. Molding Properties

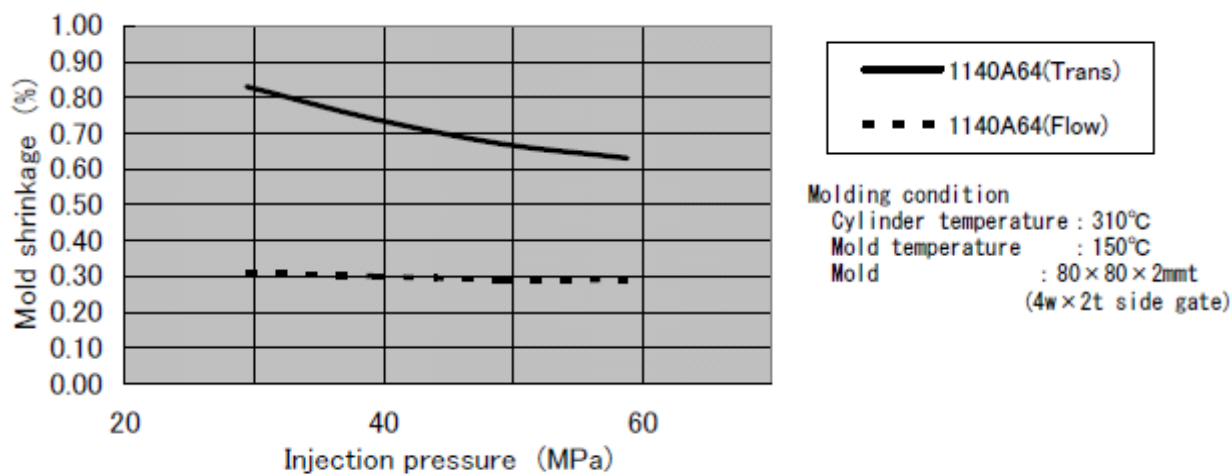
5-1) Flowability

(Figure 5-1) Flowability(1mmt)



5-2) 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.
- It is the users' responsibility to investigate patent rights, service life and potentiality of applications introduced in this brochure. Materials we supply are not intended for the implant applications in the medical and dental fields, and therefore are not recommended for such uses.
- For all works done properly, it is advised to refer to appropriate technical catalogs for specific material processing.
- 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.
- Please contact our office for any questions about products we supply, descriptive literatures or any description in this brochure.

DURAFIDE® is a registered trademark of Polyplastics Co., Ltd. in Japan and other countries.

POLYPLASTICS CO., LTD.

JR Shinagawa East Bldg.,
18-1, Konan 2-chome, Minato-ku, Tokyo, 108-8280 Japan
Tel: +81-3-6711-8610 Fax: +81-3-6711-8618

<http://www.polyplastics.com/en/>