

Polyphenylene Sulfide (PPS)

DURAFIDE®

0220A9

HD9100

(Unfilled grade)

POLYPLASTICS CO., LTD.



General Properties of 0220A9

table1-1 General Properties (ISO)

Item	Unit	Test Method	Unfilled
			0220A9
			High toughness
Color			HD9100
ISO(JIS)quality-of-the-material display:		ISO11469 (JIS K6999)	>PPS<
Density	g/cm ³	ISO 1183	1.35
Water absorption (23°C,24hrs)	%	ISO 62	0.04
Melt viscosity (310°C,1000/sec)	Pa·s	ISO 11443	500
Tensile strength	MPa	ISO 527-1,2	90
Strain at break	%	ISO 527-1,2	15 ^{※1}
Flexural strength	MPa	ISO 178	140
Flexural modulus	MPa	ISO 178	3,800
Charpy impact strength (notched)	kJ/m ²	ISO 179/1eA	3.3
Temperature of deflection under load (1.8MPa)	°C	ISO 75-1,2	100
Coefficient of linear thermal expansion (Normal temperature, Flow direction)	x10 ⁻⁵ /°C		4
Coefficient of linear thermal expansion (Normal temperature, Transverse direction)	x10 ⁻⁵ /°C		6
Dielectric breakdown strength (3mmt)	kV/mm	IEC 60243-1	19
Volume resistivity	Ω·cm	IEC 60093	2 × 10 ¹⁶
Volume resistivity (Our standard)	Ω·cm		-
Relative permittivity (1kHz)		IEC 60250	3.6
Relative permittivity (1MHz)		IEC 60250	3.6
Dielectric dissipation factor (1kHz)		IEC 60250	0.001
Dielectric dissipation factor (1MHz)		IEC 60250	0.001
Tracking resistance (CTI)	V	IEC 60112	125
Arc resistance	s		115
Relative permittivity (2GHz)		Cavity resonator method	-
Dielectric dissipation factor (2GH z)		Cavity resonator method	-
Rockwell hardness	M(Scale)	ISO2039-2	95
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



※1) Nominal strain at break

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



1. Characteristics

FORTRON is a linear PPS (Polyphenylene Sulfide) resin. **0220A9** is unreinforced PPS grade. It has high strength and toughness compared with the conventional crosslinking PPS.

2. Weld Property

0220A9 is unreinforced PPS grade, the weld strength retention rate is very high.

Table 2-1 Weld Property

	Tensile strength		Tensile elongation	
	MPa	Retention rate (%)	%	Retention rate (%)
Without Weld	84	—	8.0	—
With Weld	79	95	7.5	94

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		0220A9	
Direction		Flow direction	Transverse direction
Temperature ($^{\circ}\text{C}$)	-30	3.6	5.1
	0	3.9	5.5
	50	4.0	5.7
	100	4.5	6.1
	150	7.2	7.7
	200	9.1	9.0

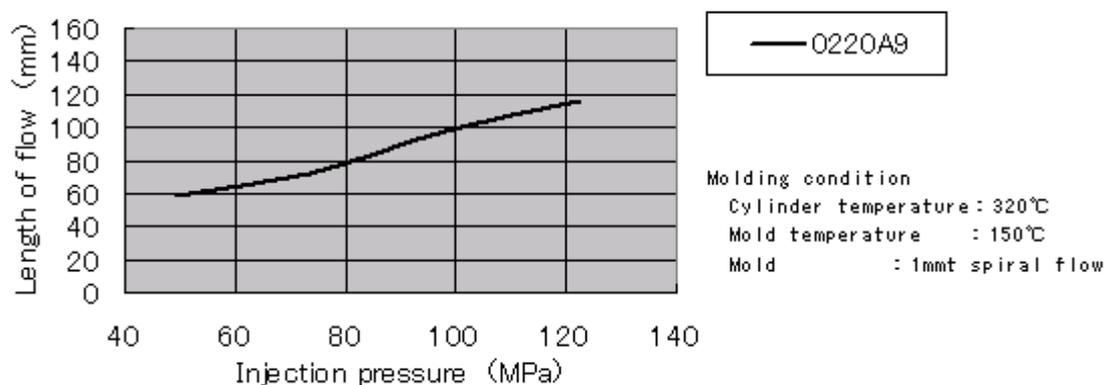
Standard temperature: 20°C



4. Molding Properties

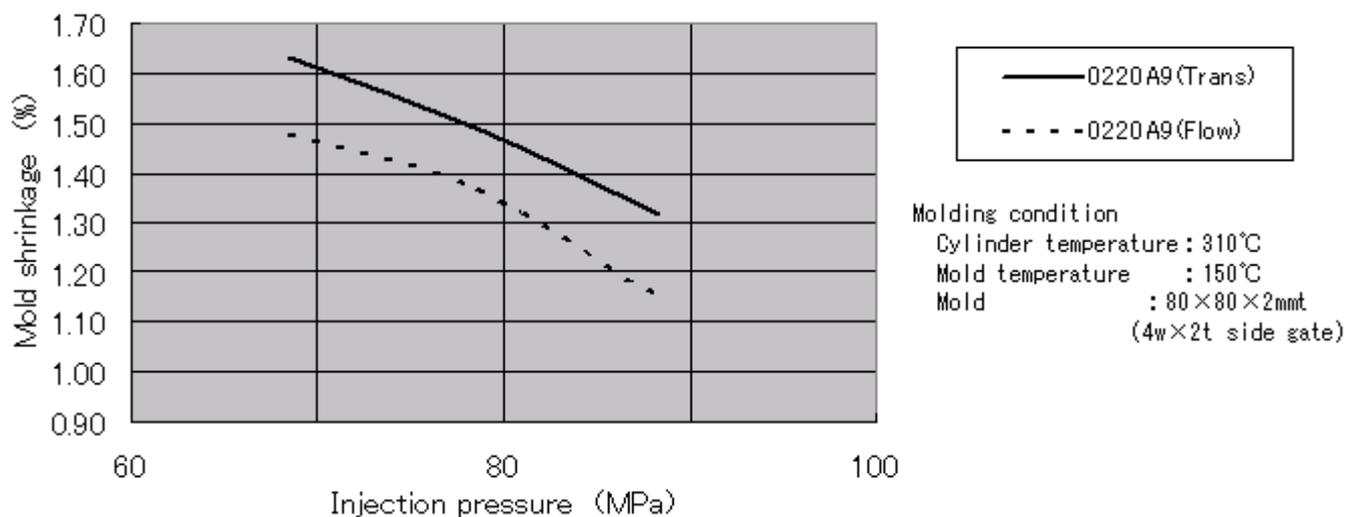
4-1 Flowability

Figure 4-1 Flowability(1mmt)



4-2 Mold Shrinkage

Figure 4-2 Mold Shrinkage(80□×2mmt)



NOTES TO USERS

- All property values shown in this brochure are the typical values obtained under varying 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 the appropriate "Technical Catalog" 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 literatures, information and data currently available to us. So the contents of this brochure are subject to change without notice due to new data.
- Please contact our office for any questions about products we supply, descriptive literatures or any description in this brochure.

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