Polybutylene Terephthalate (PBT)

DURANEX®

209AW

EF2001

Low Wear

POLYPLASTICS CO., LTD.

General Properties of 209AW

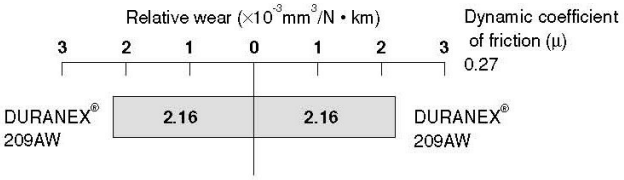
table1-1 General Properties（ISO）

Item	Unit	Test Method	Low Wear 209AW Unfilled, Flame Retardance
Color			EF2001
ISO(JIS)quality-of-the-material display:		ISO11469 (JIS K6999)	>PBT+PE-FR(17)<
Density	g/cm^3	ISO 1183	1.45
Water absorption (23°C,24hrs,1mmt)	%	ISO 62	0.2
Tensile strength	MPa	ISO 527-1,2	52
Strain at break	%	ISO 527-1,2	5.0
Flexural strength	MPa	ISO 178	82
Flexural modulus	MPa	ISO 178	2,780
Charpy notched impact strength (23℃)	kJ/m^2	ISO 179/1eA	3.5
Temperature of deflection under load (1.8MPa)	℃	ISO 75-1,2	73
Coefficient of linear thermal expansion (23 - 55℃、Flow direction)	x10^{-5}/℃	Our standard	10
Coefficient of linear thermal expansion (23 - 55℃、Transverse direction)	x10^{-5}/℃	Our standard	10
Electric strength (3mmt)	kV/mm	IEC 60243-1	18
Volume resistivity	Ω·cm	IEC 60093	4 × 10^{16}
Volume resistivity (Our standard)	Ω·cm		-
Tracking resistance (CTI)	V	IEC 60112	-
Rockwell hardness	M(Scale)	ISO2039-2	75
Flammability		UL94	V-0
The yellow card File No.			E213445
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.

2. Friction and wear properties of DURANEX® 209AW

Figure 1 Friction and wear properties (against DURANEX®)



Test parameters

Test apparatus	Thrust-type friction and wear testing apparatus	
Counter material	S55°C	DURACON® M90
Surface pressure	0.98MPa	0.58MPa
Velocity	30cm/sec	15cm/sec
Duration	24hr	

Figure 2 Friction and wear properties (against steel)

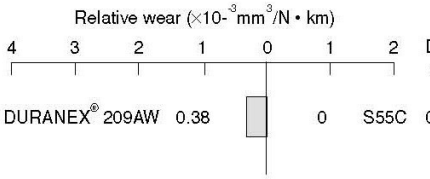


Figure 3 Friction and wear properties (against DURACON®)

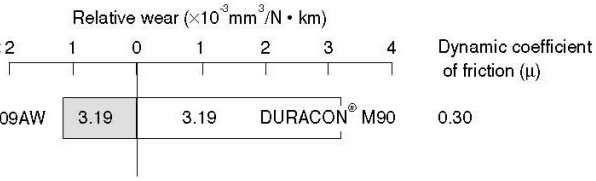


Table 2 Threshold PV values Unit(MPa· cm/s)

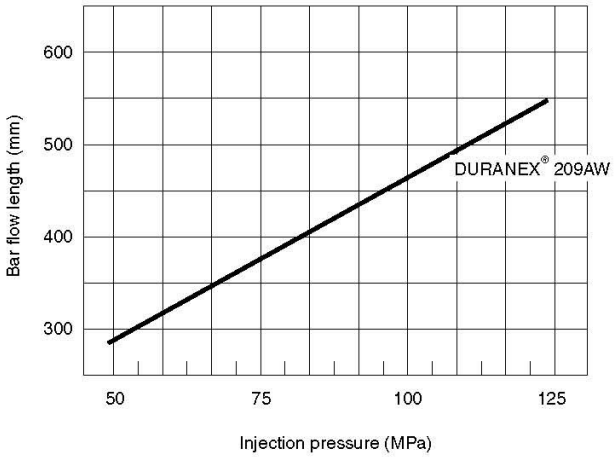
Counter material	DURANEX®209AW
M90-44	3
S55C	40

Test parameters

Test apparatus	Thrust-type friction and wear testing apparatus	
Counter material	S55°C	DURACON® M90
Velocity	30cm/sec	15cm/sec
Duration	30min	

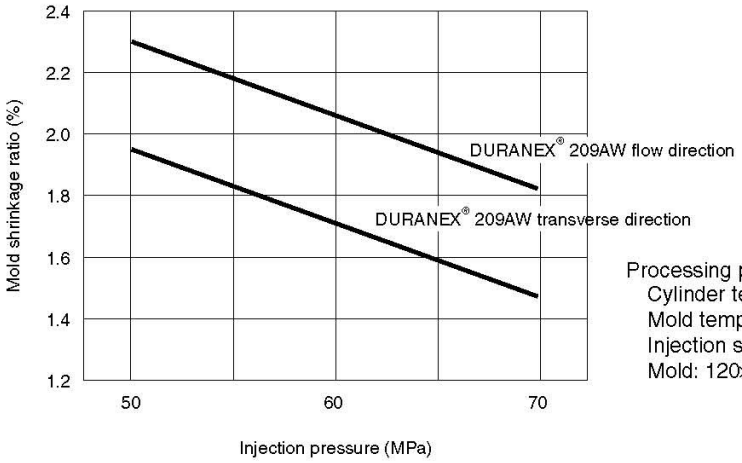
3. Processing characterictics of DURANEX® 209AW

Figure 4 Bar flow length (2 mmt)



Processing parameters
Cylinder temperature: 250-250-220-200˚C
Mold temperature: 67˚C
Injection speed: 17 mm/sec
Mold: Bar flow length test mold

Figure 5 Mold shrinkage ratio (120□×2 mmt)



Processing parameters
Cylinder temperature: 250-250-220-200˚C
Mold temperature: 65˚C
Injection speed: 17 mm/sec
Mold: 120×120×2 mm*t* flat plate

4. Flexural strength and friction modulus of DURANEX® 209AW

Figure 6 Temperature dependence of flexural strength

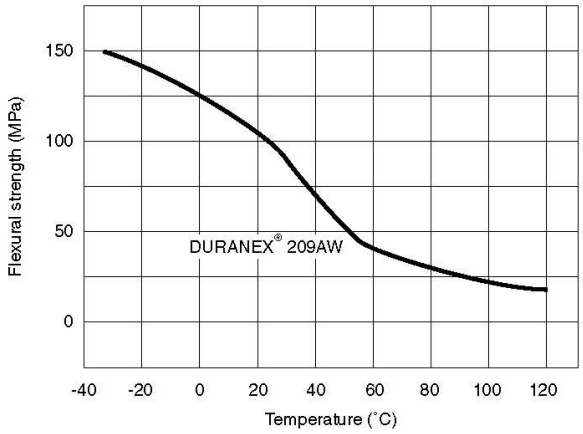
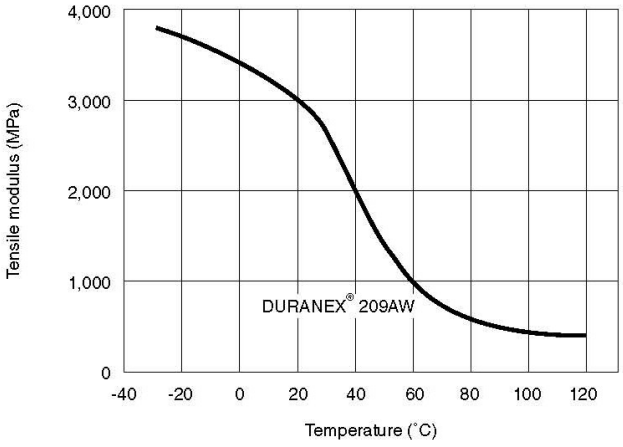


Figure 7 Temperature dependence of flexural modulus



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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.

POLYPLASTICS CO., LTD.

JR Shinagawa East Bidg.,
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/

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