

Polybutylene Terephthalate (PBT)

DURANEX®

2002

EF2001/ED3002

HB, Standard

Introduction

Noted for its excellent properties and superior injection molding characteristics,

DURANEX® PBT resin has been widely used in a variety of industries such as electrical/electronics and automotive manufacturing.

Various **DURANEX** grades are available to meet specific requirements in a wide range of applications.

The general-purpose (slow burning) glass fiber reinforced grades offer high strength, high rigidity, and superior heat resistance

(available with glass fiber contents of 15%, 20%, 30%, 40%, and 45%).

However, these grades are sometimes prone to problems such as distortion, deformation, and anisotropic physical properties due to the orientation of the glass fiber.

Consequently, for applications where flexibility is more important than rigidity, the general-purpose (slow burning) unfilled grades, **DURANEX 2000** and **2002** are more suitable.

DURANEX 2002 has better mechanical properties such as impact strength and toughness.

General Properties of 2002

table1-1 General Properties (ISO)

Item	Unit	Test Method	HB, Standard
			2002
			Unfilled, Toughness
Color			EF2001/ED3002
ISO(JIS)quality-of-the-material display:		ISO11469 (JIS K6999)	>PBT<
Density	g/cm ³	ISO 1183	1.31
Water absorption (23°C,24hrs,1mmt)	%	ISO 62	0.2
Tensile strength	MPa	ISO 527-1,2	60
Strain at break	%	ISO 527-1,2	50 ^{*1}
Flexural strength	MPa	ISO 178	95
Flexural modulus	MPa	ISO 178	2,630
Charpy notched impact strength (23°C)	kJ/m ²	ISO 179/1eA	3.4
Temperature of deflection under load (1.8MPa)	°C	ISO 75-1,2	70
Coefficient of linear thermal expansion (23 - 55°C、Flow direction)	x10 ⁻⁵ /°C	Our standard	11
Coefficient of linear thermal expansion (23 - 55°C、Transverse direction)	x10 ⁻⁵ /°C	Our standard	11
Electric strength (3mmt)	kV/mm	IEC 60243-1	14
Volume resistivity	Ω·cm	IEC 60093	5 × 10 ¹⁶
Volume resistivity (Our standard)	Ω·cm		-
Tracking resistance (CTI)	V	IEC 60112	-
Rockwell hardness	M(Scale)	ISO2039-2	90
Flammability		UL94	HB
The yellow card File No.			E213445
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.

2. Processing characteristics of DURANEX® 2002

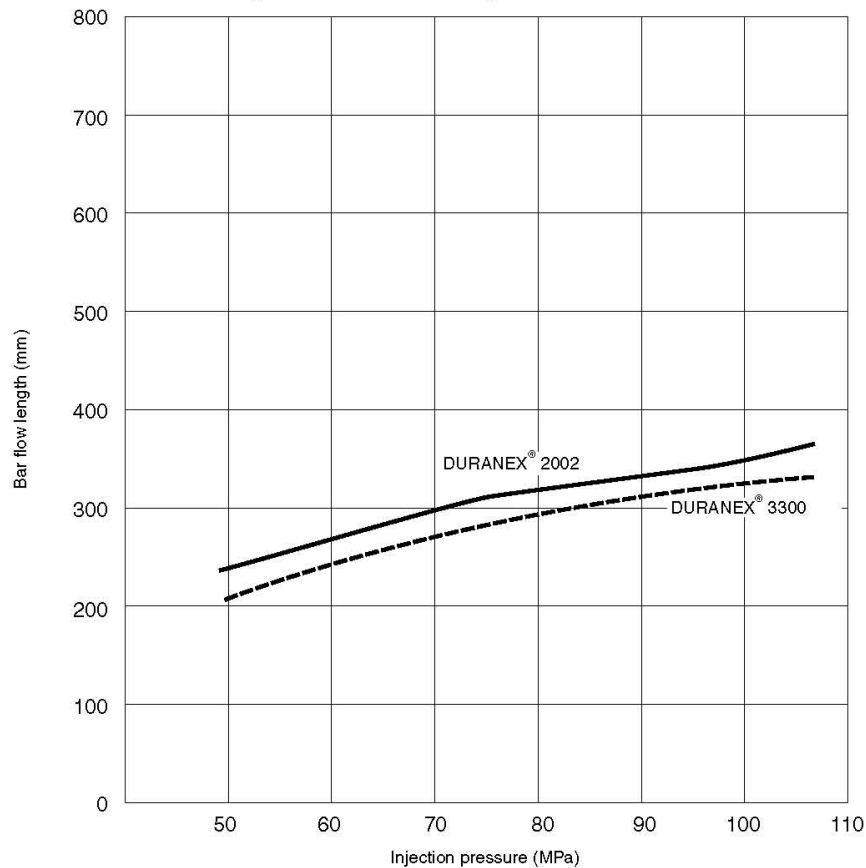
2.1 Flow characteristics

In **Figure 2-1**, the bar flow lengths of **2002** are compared with that of the standard glass-fiber reinforced grade **3300**. Compared to **3300**, the bar

flow length of **2002** is slightly longer.

The grade most suitable for the shape of the molding and type of application should be selected.

Figure 2-1 Bar Flow Lengths of DURANEX® 2002



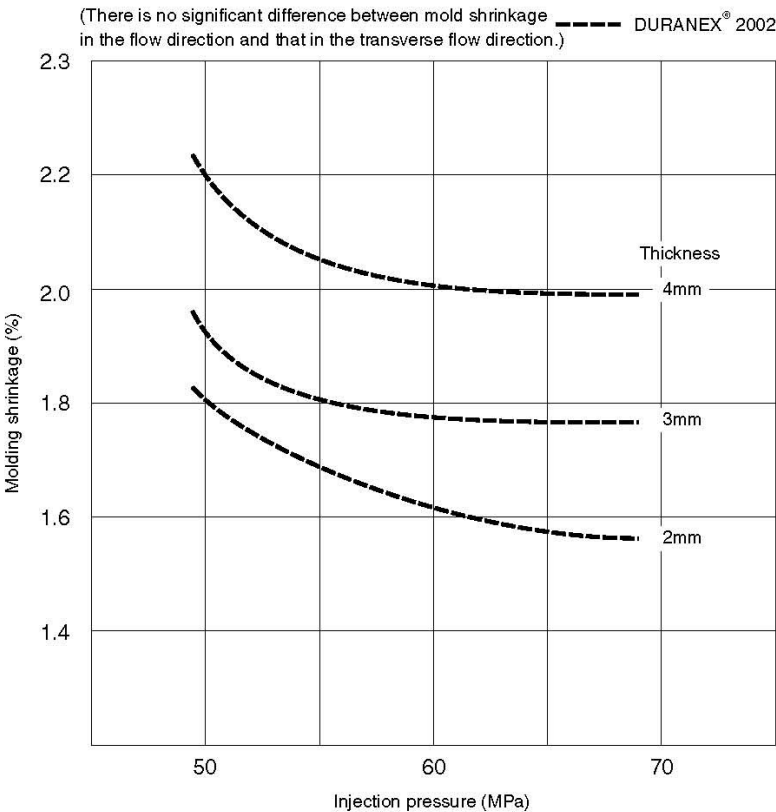
Processing parameters
Cylinder temperature : 250-240-220-200°C (Nozzle)
Mold temperature : 75°C
Injection speed : 50mm/s
Cycle time : 12s hold phase/8s cooling
Mold : Bar flow test mold
Cavity depth : 2mm

2.2 Molding shrinkage

Figure 2-2 shows the molding shrinkage of 2002. Unlike the glass-fiber reinforced grades, its

molding shrinkage does not show any anisotropic behavior.

Figure 2-2 Molding Shrinkage of DURANEX® 2002 (Flow Direction)



Processing parameters
Cylinder temperature: 240-240-220-200°C (Nozzle)
Mold temperature: 65°C
Injection speed: 33mm/s
Cycle time: Thickness 2t 3t 4t
 Hold phase 10s 20s 30s
 Cooling 10s 10s 10s
Mold: 120×120mm×2, 3, and 4mm flat plate
Gate size: 4(w)×2(f)

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.

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