

Polybutylene Terephthalate (PBT)

DURANEX®

GFR320

EF2001/ED3002

Flame Retardant, New
Standard, UL Approved
Regrind 50% Inclusive

POLYPLASTICS CO., LTD.

Introduction

DURANEX® PBT is a crystalline engineering plastic with a polybutylene terephthalate (**PBT**) base.

In particular, it has excellent heat resistance and electrical properties. And because it also has excellent moldability, it has gained a high degree of reliability as a material suitable for electrical and electronic parts, automobile parts and a wide variety of precision parts.

The DURANEX® PBT GFR series we introduce here is a material of proven high quality and stable supply and is now available to our customers globally.

DURANEX® PBT GFR Series Grade Line-up

- **GFR315** GF15% reinforced, flame retardant, standard, UL approved regrind 50% inclusive
- **GFR320** GF20% reinforced, flame retardant, standard, UL approved regrind 50% inclusive
- **GFR330** GF30% reinforced, flame retardant, standard, UL approved regrind 50% inclusive

General Properties of GFR320

table1-1 General Properties (ISO)

Item	Unit	Test Method	Flame Retardant, New Standard, UL Approved Regrind 50% Inclusive
			GFR320
			GF20% Reinforced
Color			EF2001/ED3002
ISO(JIS)quality-of-the-material display:		ISO11469 (JIS K6999)	>PBT-GF20 FR(17)<
Density	g/cm ³	ISO 1183	1.62
Water absorption (23°C,24hrs,1mmt)	%	ISO 62	-
Tensile strength	MPa	ISO 527-1,2	119
Strain at break	%	ISO 527-1,2	2.4
Flexural strength	MPa	ISO 178	179
Flexural modulus	MPa	ISO 178	7,750
Charpy notched impact strength (23°C)	kJ/m ²	ISO 179/1eA	6.1
Temperature of deflection under load (1.8MPa)	°C	ISO 75-1,2	205
Coefficient of linear thermal expansion (23 - 55°C、 Flow direction)	x10 ⁻⁵ /°C	Our standard	-
Coefficient of linear thermal expansion (23 - 55°C、 Transverse direction)	x10 ⁻⁵ /°C	Our standard	-
Electric strength (3mmt)	kV/mm	IEC 60243-1	-
Volume resistivity	Ω·cm	IEC 60093	-
Volume resistivity (Our standard)	Ω·cm		-
Tracking resistance (CTI)	V	IEC 60112	-
Rockwell hardness	M(Scale)	ISO2039-2	-
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. Moldability

2-1 Mold Shrinkage

Table 2-1 Mold shrinkage(2mmt)

		New Standard,V-0
		GFR320
		GF20% reinforced
Injection Pressure: 60MPa	Flow direction	0.5
	Transverse direction	1.1
	Average	0.8
Injection Pressure: 70MPa	Flow direction	0.4
	Transverse direction	1.0
	Average	0.7

(Unit %)

<Molding conditions>

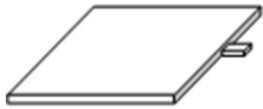
Cylinder temp. : 260℃

Mold temp. : 60℃

Injection speed : 17mm/s

Mold : 120×120×2mmt Flat plate

Side gate : 4×2mm



2-2 Flowability

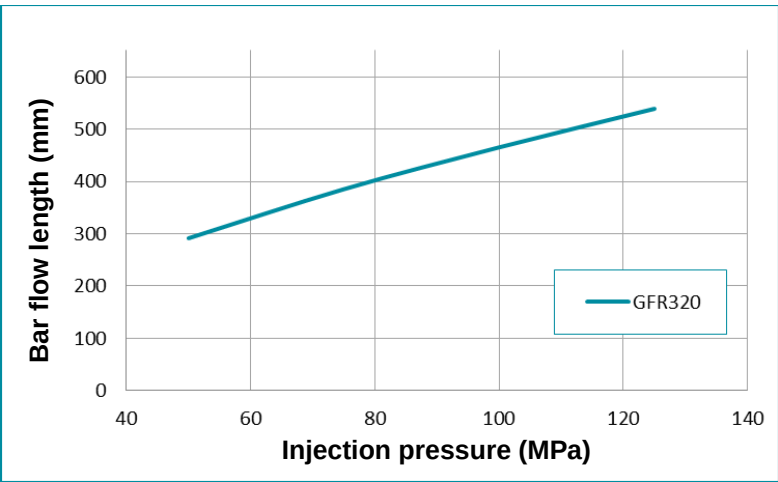


Figure2-1. Bar Flow Length (2mmt)

<Molding conditions>

Cylinder temp. : 260℃

Mold temp. : 60℃

Injection speed : 70mm/s

Mold : Bar flow test mold
(2mm thick)



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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