Polybutylene Terephthalate (PBT)

DURANEX®

7300E

ED3002

Electric conductive

POLYPLASTICS CO., LTD.

Introduction

DURANEX® PBT is an engineering plastics that combines excellent mechanical, thermal, and electrical properties with superior processability. It is utilized in mechanical components in numerous industrial fields, such as electrical and automotive, and its applications are steadily becoming more varied.

At Polyplastics, we offer many grades of **DURANEX** to cater for a diverse variety of applications. In applications like sliding and rotating components, where static electricity is easily generated, there are cases where the adherence of dust particles and the generation of electrical noise result in undesirable effects in terms of part performance. Such cases demand antistatic properties or a certain levele of conductivity.

We have developed **DURANEX 7300E** for this very purpose. **7300E** is a glass fiber-reinforced grade whose natural color is black.

General Properties of 7300E

table1-1 General Properties（ISO）

Item	Unit	Test Method	Electric conductive
			7300E
			GF reinforced
Color			ED3002
ISO(JIS)quality-of-the-material display:		ISO11469 (JIS K6999)	>PBT-(GF+CD)35<
Density	g/cm^3	ISO 1183	1.48
Water absorption (23°C,24hrs,1mmt)	%	ISO 62	0.1
Tensile strength	MPa	ISO 527-1,2	110
Strain at break	%	ISO 527-1,2	2.3
Flexural strength	MPa	ISO 178	171
Flexural modulus	MPa	ISO 178	7,000
Charpy notched impact strength (23℃)	kJ/m^2	ISO 179/1eA	6.0
Temperature of deflection under load (1.8MPa)	℃	ISO 75-1,2	205
Coefficient of linear thermal expansion (23 - 55℃、Flow direction)	$x10^{-5}$/℃	Our standard	3
Coefficient of linear thermal expansion (23 - 55℃、Transverse direction)	$x10^{-5}$/℃	Our standard	9
Electric strength (3mmt)	kV/mm	IEC 60243-1	1
Volume resistivity	Ω·cm	IEC 60093	2×10^{11}
Tracking resistance (CTI)	V	IEC 60112	-
Rockwell hardness	M(Scale)	ISO2039-2	100
Flammability		UL94	HB
The yellow card File No.			E213445
Appropriate List number of Ministerial Ordinance for Export Trade Control			Item 16 of Appendix -1

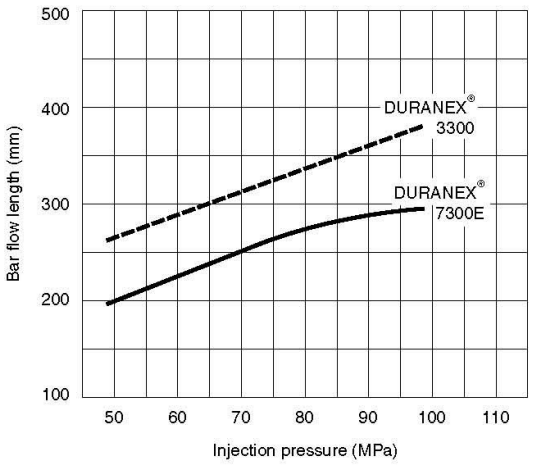
All figures in the table are the typical values of the material and not the minimum values of the material specifications.

2. Processing characteristics of DURANEX® 7300E

2.1 Flow characteristics

As shown in **Figure 2-1**, bar flow length tests indicate **7300E** has approximately 80% of the flowability of 3300, meaning that its flowability is somewhat lower. However, the value is good for a glass fiber-reinforced engineering plastic. Grade **7300E** can be processed under the same parameters as the general-purpose grade 3300.

Figure 2-1 DURANEX® 7300E bar flow length (2mm*t*)



Processing parameters
Cylinder temperature:250˚C
Mold temperature:75˚C
Injection speed:67mm/sec
Gate:20 (*w*) ×2 (*t*) mm

2.2 Mold shrinkage ratio

The mold shrinkage ratio for **7300E** as is shown in **Table 2-1**. Compared with 3300, the values are almost the same, albeit somewhat larger.

Table 2-1 Mold Shrinkage Ratio for DURANEX® 7300E (3mm*t*)

Direction	Injection pressure (MPa)	
	DURANEX® 7300E	DURANEX® 3300
Flow direction	0.5	0.4
Transverse direction	1.0	0.7

Processing parameters
Cylinder temperature:240˚C
Mold temperature:63˚C
Injection pressure:73MPa
Injection speed:42mm/sec
Injection molding test piece:120mm□×3mm*t* flat plate
Gate:4 (*w*) ×2 (*t*) mm

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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.

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