

Polybutylene Terephthalate (PBT)

DURANEX®

304SA

EF2001/ED3002

Low Warpage, SA
Series

General Properties of 304SA

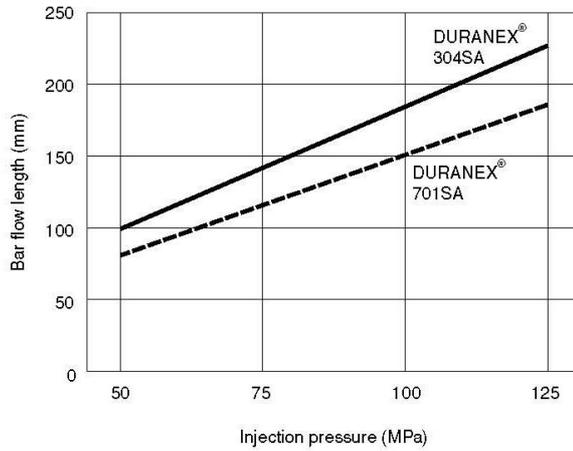
table1-1 General Properties (ISO)

| Item | Unit | Test Method | Low Warpage, SA Series |
|---|-----------------------|----------------------|--|
| | | | 304SA |
| | | | GF Reinforced, Low Density, High Sliding |
| Color | | | EF2001/ED3002 |
| ISO(JIS)quality-of-the-material display: | | ISO11469 (JIS K6999) | >PBT+ABS-GF15< |
| Density | g/cm ³ | ISO 1183 | 1.28 |
| Water absorption (23°C,24hrs,1mmt) | % | ISO 62 | 0.2 |
| Tensile strength | MPa | ISO 527-1,2 | 96 |
| Strain at break | % | ISO 527-1,2 | 2.3 |
| Flexural strength | MPa | ISO 178 | 139 |
| Flexural modulus | MPa | ISO 178 | 5,310 |
| Charpy notched impact strength (23°C) | kJ/m ² | ISO 179/1eA | 6.0 |
| Temperature of deflection under load (1.8MPa) | °C | ISO 75-1,2 | 120 |
| Coefficient of linear thermal expansion (23 - 55°C、 Flow direction) | x10 ⁻⁵ /°C | Our standard | 4 |
| Coefficient of linear thermal expansion (23 - 55°C、 Transverse direction) | x10 ⁻⁵ /°C | Our standard | 8 |
| Electric strength (3mmt) | kV/mm | IEC 60243-1 | 24 |
| 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 | 80 |
| 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.

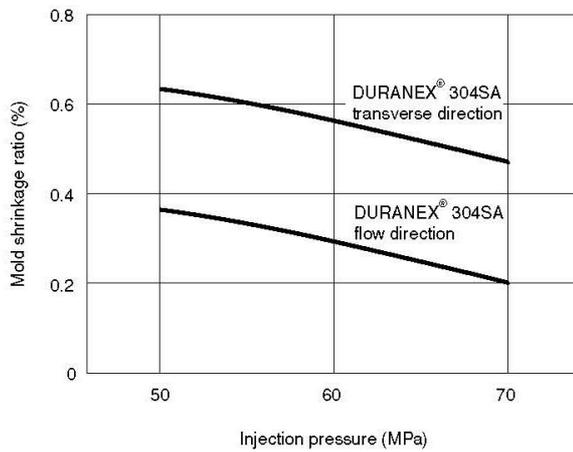
2. Processing characteristics of DURANEX® 304SA

Figure 1 Bar flow length of DURANEX® 304SA (1 mm \bar{t})



Processing parameters
Cylinder temperature: 250-250-230-210°C
Mold temperature: 65°C
Injection speed: 67 mm/sec
Mold: 1 mmt bar flow length test mold

Figure 2 Mold shrinkage ratio of DURANEX® 304SA (120 \bar{r} 2 mm \bar{t})



Processing parameters
Cylinder temperature: 250-250-230-210°C
Mold temperature: 65°C
Injection speed: 17 mm/sec
Mold: 120 \times 120 \times 2 mmt flat plate
Gate size: 4 (W) \times 2 \bar{t}

Important points when processing

DURANEX® PBT SA series

As the Duranex® PBT SA series employs special alloying technology, the pellet drying parameters differ from those of standard Duranex grades.

Please aim to adhere to a maximum drying temperature of 120°C.

Pellet drying parameters

| Duranex® PBT SA series | | | Standard Duranex® PBT | |
|------------------------|-------------|---|-----------------------|-------------|
| Drying temperature | Drying time | | Drying temperature | Drying time |
| 105°C | over 8hrs |  | 105°C | over 8hrs |
| 120°C | 5-6 hrs | | 120°C | 5-6 hrs |
| | | | 140°C | 3 hrs |

If Duranex SA series pellets are dried at 140°C , there are cases in which the pellets agglomerate. Therefore, we advise adherence to the above conditions.

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.

DURANEX® is a registered trademark of Polyplastics Co., Ltd. in Japan and other countries.

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