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**TEXTILE INDUSTRY STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

FZ/T 54040-2021

**Polybutylene terephthalate drawn textured yarns
(English Translation)**

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Foreword

This document is in accordance with the provisions of GB/T 1.1-2020 "Guidelines for Standardization Work Part 1: Structure and Drafting Rules of Standardization Documents" drafted.

This document replaces FZ/T 54040-2011 "Polybutylene terephthalate (PBT) elastic yarn", which is the same as FZ/T 54040-2011 the main technical changes are as follows.

---Add "GB/T 4146 (all parts)" to the normative references, and the corresponding part of the terms will not be repeated (see Chapter 2, Chapter 2 of the 2011 edition);

--- Terms and definitions, delete the terms and definitions of batches, batch samples, production batches, and inspection batches (see Chapter 3, Chapter 3 of the 2011 edition);

--- Product grading, cancel the superior product (AA grade), first-class product (A grade), qualified product (B grade), and the lower than qualified product is an external product (C grade).

The expression is changed to. Products are divided into three grades. superior products, first-class products, and qualified products (see 5.1, 5.1 of the 2011 edition);

---The index of crimp stability of first-class products, first-class products, and qualified products has been changed from the original standard of $\geq 85.0\%$, $\geq 80.0\%$, and $\geq 70.0\%$ $\geq 80.0\%$, $\geq 75.0\%$, $\geq 70.0\%$ (see Table 1, Table 1 of the 2011 edition);

---Indices of high-quality barrel weight, changed from the original fixed weight or fixed length to. fixed weight (see Table 1, Table 1 of the 2011 edition);

--- Expand the value range of the central value of elongation at break, and modify it from the original standard 25% to 35% to 25% to 40% (see

Table 1, Table 1 of the 2011 edition);

--- Expand the value range of the central value of the crimp shrinkage rate, and modify it from the original standard 35%~55% to 30%~65%.

Table 1, Table 1 of the 2011 edition);

--- Supplementary requirements for the central value of the boiling water shrinkage rate, no need to assess the boiling water shrinkage rate below 1.5% (see Table 1, Table 1 of the 2011 edition);

--- The dyeing uniformity test method shall be implemented in accordance with the latest edition of GB/T 6508, without additional test conditions (see 6.4, 2011 edition 6.1.5);

---The boiling water shrinkage test adds the note "the same method is used for both supply and demand, or the skein method or the single method" (see 6.5, 2011 version 6.1.6);

--- The network degree test method specifies that the manual needle movement counting method shall be used in arbitration (see 6.7, 6.1.8 of the 2011 edition);

---Appearance inspection equipment adds provisions for grading vehicles under mobile light sources and fixed light sources (see 6.9.1, 6.2.1 of the 2011 edition).

Please note that some content of this document may be patented. The issuing agency of this document assumes no responsibility for identifying patents.

1 Scope

This document specifies the terms and definitions, product identification, technical requirements, test methods, Inspection rules and requirements for marking, packaging, transportation and storage.

This document is applicable to the true color of the circular cross-section with a bus density of 22dtex~340dtex and a monofilament linear density of 1.0dtex~5.6dtex Polybutylene terephthalate stretch yarn. Other types of polybutylene terephthalate (PBT) elastic yarn can be used for reference.

2 Normative references

The contents of the following documents constitute essential provisions of this document through normative references in the text. Among them, dated citations documents, only the version corresponding to that date applies to this document; for undated references, the latest edition (including all amendments) applies to this document.

GB/T 250 Textile color fastness test gray sample card for evaluating discoloration GB/T 2828.1-2012 Counting Sampling Inspection Procedures Part 1: Lot-by-Lot Inspection Sampling Retrieved by Acceptance Quality Limit (AQL) plan GB/T 3291.1 Textile and Textile Material Properties and Test Terms Part 1: Fibers and Yarns GB/T 3291.3 Textile Material Properties and Test Terms Part 3: General GB/T 4146 (all parts) Textile chemical fibers GB/T 6502 Chemical Fiber Filament Sampling Method GB/T 6504 Test method for oil content of chemical fibers GB/T 6505 Test method for thermal shrinkage of chemical fiber

filaments (after treatment) GB/T 6506 Test method for crimping properties of synthetic fiber textured yarns GB/T 6508 Polyester filament dyeing uniformity test method GB/T 8170-2008 Numerical Rounding Rules and Representation and Judgment of Limit Values GB/T 14343 Test method for linear density of chemical fiber filaments GB/T 14344 Test method for tensile properties of chemical fiber filaments FZ/T 50001-2016 Test method for network degree of synthetic fiber filaments

3 Terms and Definitions

Terms and definitions defined in GB/T 3291.1, GB/T 3291.3 and GB/T 4146 (all parts) apply to this document.

4 Product identification

4.1

Product specifications are expressed in terms of linear density (dtex) and number of single filaments (f). For example, the linear density is 167dtex, and the number of monofilaments is 48 polyparaphenylene Butylene glycol diformate (PBT) elastic yarn, its product specification is expressed as 167dtex/48f.

4.2

Product identification should include. product specification, product type, product name or batch number and other information, which can be effectively distinguished.