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BOPET Thermal Transfer Ribbon (TTR) Film 4.5Microns

4.5微米BOPET热转印碳带（TTR）基膜

Document No. 文件编号	Revision 版本	Issue date 签发日期	Document type 文件类型
APIG-PDS-BPE-010-2026	**Rev. 1.0**	**2026-11-07**	**Product Data Sheet / 产品规格书**

BOPET film, 4.5μm, for printing, lamination and flexible packaging, supply to TTR and barcode ribbon converters.
BOPET薄膜，4.5微米，用于印刷、复合与软包装，供应TTR与条码碳带加工商。

1. TECHNICAL PROPERTIES 技术参数

Property 项目 Specification 规格	
Thickness 厚度	4.5 / 6 / 8 / 12 / 23 / 36 μm (按订单确认)
Material 材质	Biaxially Oriented Polyethylene Terephthalate (BOPET)
Colour 颜色	Clear, transparent 透明
Surface treatment 表面处理	Untreated or corona treated (≥38 dyn/cm)
Width 幅宽	1,000 - 1,570 mm
Roll length 卷长	3,000 - 12,000 m (width dependent)
Density 密度	1.40 g/cm³ (amorphous 1.335 / crystalline 1.455)
Haze 雾度	< 3 % (ultra-thin grades)
Tensile strength 拉伸强度	MD 400-550 MPa / TD 400-550 MPa
Shrinkage 热收缩率	2 - 3 % MD, 0 - 1 % TD (heat set)
Elongation at break 断裂伸长率	MD 35-90 % / TD 20-80 %
Dielectric strength 介电强度	≥300 kV/cm (uncoated)

2. TYPICAL APPLICATIONS 典型应用

Thermal transfer ribbon base, flexible packaging, lamination base, capacitor and metallized film

3. PRODUCT DESCRIPTION 产品说明

B OPET Thermal Transfer Ribbon (TTR) Film 4.5Microns
BOPET 热转印碳带（TTR）基膜，厚度 4.5/6/8/12/23/36 μm（按订单确认），材料为双向拉伸聚酯（BOPET）。

4.5 microns BOPET Thermal Transfer Ribbon (TTR) Film is an ultra-thin, high-performance material specifically designed for thermal transfer printing applications. It is widely used in industries requiring high-resolution, durable, and efficient printing, such as barcode labeling, product identification, and industrial marking. Below is a detailed introduction to this specialized film:

1. Material Overview

Thickness: 4.5 microns (μm), making it an ultra-thin film.

Base Material: Biaxially Oriented Polyethylene Terephthalate (BOPET), a type of polyester film known for its strength, thermal stability, and dimensional stability.

Structure: Typically consists of three layers:

Base Film: The BOPET layer provides mechanical support and stability.

Ink Layer: A thermally sensitive coating containing wax, resin, or a hybrid formulation, which transfers onto the substrate during printing.

Back Coating: A protective layer that reduces friction, prevents static buildup, and protects the print head from wear and tear.

2. Key Features

High Resolution: The 4.5-micron thickness allows for precise and sharp printing, ideal for detailed barcodes, text, and graphics.

Durability: Printed images are resistant to abrasion, chemicals, and environmental factors, ensuring long-lasting legibility.

Efficiency: The ultra-thin design reduces material usage, lowering costs while maintaining high print quality.

Compatibility: Suitable for a wide range of substrates, including paper, synthetic labels, and textiles.

Thermal Stability: Withstands high temperatures during the thermal transfer process without deformation.

3. Applications

4.5 microns BOPET TTR film is widely used in industries that require high-quality, durable printing:

Barcode Printing: For retail, logistics, and inventory management systems.

Product Labeling: For consumer goods, pharmaceuticals, and industrial products.

Asset Tagging: For tracking and identification in manufacturing and healthcare.

Specialized Printing: For applications requiring high durability and precision, such as electronics and automotive parts labeling.

4. Manufacturing Process

Base Film Production: High-quality BOPET film is produced through biaxial orientation, enhancing its strength and thermal stability.

Coating Application: The ink layer is uniformly applied to the base film using advanced coating technologies.

Back Coating: A protective layer is added to the opposite side of the base film to ensure smooth operation and print head protection.

Slitting and Packaging: The film is precision-slitted to the required width and packaged for distribution.

5. Advantages and Challenges

Advantages:

Ultra-thin and lightweight, reducing material costs.

High print quality with excellent resolution.

Durable and resistant to environmental factors.

Compatible with a wide range of thermal transfer printers.

Challenges:

Requires advanced manufacturing techniques to ensure uniformity and quality.

Sensitive to handling and storage conditions due to its thinness.

6. Market Outlook

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The demand for 4.5 microns BOPET TTR film is growing due to the increasing adoption of barcode technology, automation in logistics, and the need for high-quality labeling in various industries. Its superior performance and cost-effectiveness make it a preferred choice for thermal transfer printing applications.

5. HS CODE & REMARKS 海关编码与备注

Item 项目 **Value 内容**	
HS Code 海关编码	3920620000
Product Code 产品编号	APIG-BPE-010

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