



和顺科技

Heshun Technology

股票代码: 301237

FUNCTIONAL POLYESTER FILM PRODUCTION

EXPERT 功能性聚酯薄膜生产专家

杭州和顺科技股份有限公司

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技术咨询
Technical Consultation

客户的需求就是我们的追求

The needs of our customers is our pursuit

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COMPANY PROFILE / 公司简介

杭州和顺科技股份有限公司(股票代码: 301237), 成立于2003年6月, 是一家专注于差异化、功能性双向拉伸聚酯薄膜研发、生产和销售为一体的高新技术企业。目前主要生产厂区分别位于杭州市余杭经济开发区和湖州市德清临杭工业园区(全资子公司浙江和顺新材料有限公司)。公司现共有六条聚酯薄膜生产线, 年产能可达11.5万吨。主要产品为有色光电基膜、透明膜及其他功能膜三大类, 是国内少数几家能够提供多色系有色光电基膜产品的企业之一, 市场份额稳居国内前三名。公司已形成了双向拉伸有色薄膜制造技术、有色薄膜配方技术及阻燃聚酯膜制造技术等核心技术体系, 并已取得了63项专利授权, 其中发明专利27项, 打破了日本东丽、韩国SKC等企业在有色膜领域的垄断, 为我国电子工业健康发展提供了关键膜材料技术支撑。

12万m² 建筑面积
BUILT-UP AREA

63项 国家专利
NATIONAL PATENTS

301237 股票代码
STOCK CODE



Hangzhou Heshun Technology Co., Ltd. (stock code: 301237), established in June 2003, is a focus on differentiation, functional biaxial stretch polyester film R & D, production and sales of high-tech Enterprises. At present, the main production plants are located in Hangzhou Yuhang Economic Development Zone and Huzhou Deqing County, Zhejiang Linhang Industrial Park (wholly-owned subsidiary Zhejiang Heshun New Materials Co., Ltd.). The company now has six polyester film production lines with an annual capacity of 115,000 tons. The main products for the color photoelectric base film, transparent film and other functional film three categories, is one of the few domestic enterprises can provide multi-color color photoelectric base film products, market share ranks in the top three domestic. The company has formed the core technology system of biaxially oriented nonferrous film manufacturing technology, nonferrous film formulation technology and flame retardant polyester film manu-

facturing technology, and has obtained 63 patents, including 27 invention patents, it has broken the monopoly of Japanese Toray and Korean SKC enterprises in the field of colored film, and provided the technical support of key film materials for the healthy development of our electronic industry.



QUALIFICATION HONOR / 资质荣誉

数年来，公司获得无数赞誉，已被评为国家级高新技术企业、国家工信部专精特新小巨人企业、浙江省创新型中小企业、浙江省 AAA 级“守合同重信用”企业等荣誉称号，并通过了美国 UL 认证、质量体系 ISO9001、环境体系 ISO14001 等体系认证，已成功申请 63 项国家专利证书，其中发明专利 27 项，并获得中国专利优秀奖。

Over the years, the company has received countless accolades, has been rated as a state-level high-tech Enterprises, the Ministry of Industry and information technology specializing in the new small giant enterprises, small and medium-sized innovative enterprises in Zhejiang province, Zhejiang province, AAA-level "Keep the contract and re-credit" enterprises and other honorary titles, and through the United States UL certification, Quality System ISO9001, environmental system ISO14001 and other system certification, has successfully applied for 63 national patent certificates, including 27 invention patents, and won the Chinese Patent Award for Excellence.



INTELLIGENT MANUFACTURING / 智能制造

公司技术力量雄厚,生产设备精良,管理体系健全,目前拥有六条专业的全自动 BOPET 生产线,能根据市场和客户的不同需求,通过对设备的组装、工艺的设计、配方的优化、参数的调整生产出不同规格、不同型号、不同用途的差异化功能性聚酯薄膜产品。

公司设有省级研发中心、博士后工作站,以聚酯薄膜 (BOPET) 的差异化功能性为主要研发方向,致力于聚酯薄膜的功能化改性,尤其是高端光学聚酯薄膜和高端功能聚酯薄膜方向,为解决国内各工业产业链中涉及到功能性聚酯薄膜产品的关键材料和“卡脖子”材料问题做出贡献。



The company has strong technical force, sophisticated production equipment, sound management system, currently has six professional automatic BOPET production lines, according to the market and customer needs, through the assembly of the equipment, process design, formula optimization, parameters adjustment to produce different specifications, different models, different uses of functional polyester film products.

The company has a provincial R & D Center, postdoctoral workstation, to polyester film (Bopet) for the main research and development of the differential functionality of polyester film (Bopet), dedicated to the functional modification of polyester film, in particular, high-end optical polyester film and high-end functional polyester film direction, to solve the domestic industrial chain involved in the functional polyester film products and the key materials. "Neck" material to contribute.

QUALITY CONTROL / 品质管控



质量管理
Quality Management



专业培训
Professional Training



专业检测
Professional Testing



确保品质
Ensure Quality

公司拥有完整、科学的质量管理体系，有专业的质检工程师对产品进行质量管控，同时公司具备各类先进的检测仪器、过硬的检测标准和优质的售后服务，多年来收获了客户的高度认可。

Heshun Company has a complete scientific quality management system and professional QA engineer to control the quality. Meanwhile there are all kinds of advanced testing equipment with excellent testing standards and excellent after-sale service. It has been highly recognized by clients.



PRODUCT INTRODUCTION / 产品简介

公司已生产研发各类差异化功能性的BOPET 聚酯薄膜，产品优越的性能和质量获得广大客户的好评。

上述信息为我司或第三方检测所得，公司在不断进步，此表仅作为参考供客户使用；由于各厂家生产设备、工艺条件及产品用途、要求不同，因此和顺只对薄膜本身的性能负责，而非对产品的每种具体使用方法及应用要求负保证责任。

Heshun Company has produced and developed all kinds of differentiated functional BOPET polyester film. It has won good praises from customer for superior product performance and quality.

The above information is tested by our company and the third testing organization. This table for customer reference only because of the process of company. Different manufacturers have different production equipment, process conditions, product application and requirements. Therefore, Heshun Company is responsible for the performance of the product itself instead of usage and application.

- 干膜/ DRY FILM
- 绿膜/ GREEN FILM
- 红膜/ RED FILM
- 黄膜/ YELLOW FILM
- 蓝膜/ BLUE FILM
- 抗静电蓝膜/ ANTISTATIC BLUE FILM
- 蓝膜/ BLUE FILM
- 高亮膜/ HIGH GLOSS FILM
- 离型保护膜/ RELEASE PROTECTION FILM
- MLCC用基膜/ MLCC BASE FILM
- 偏光片用基膜/ BASE FOR POLARIZING PLATE FILM
- OCA光学胶用基膜/ OCA OPTICAL ADHESIVE BASE FILM
- 阻燃膜/ FLAME RETARDANT FILM
- 黑膜/ BLACK FILM
- 单面亚光膜/ SINGLE SIDED MATTE FILM
- 双面亚光膜/ DOUBLE-SIDED MATTE FILM
- 太阳能背板膜/ SOLAR BACKPANEL FILM
- 白膜/ WHITE FILM



BLUE
FILM
蓝膜 /



产品型号 /Product Model

L701、L702、L703、L705、L706、L709(单面 / 双面 / 无电晕)
L701, L702, L703, L705, L706, L709 (single/double/no corona)

产品性能特点 /Product Performance Features

蓝膜由特制原料经复杂加工工艺制成,除了具有良好的化学性能外,主要还有:

- 优异的拉伸性能
- 良好的表面光泽度和表观性能
- 涂布印刷复合性能优良

Blue film is made from specially made raw materials through complex processing techniques. In addition to having good chemical properties, it mainly includes:

- Excellent tensile performance
- Good surface glossiness and apparent performance
- Excellent composite performance of coating printing

产品规格 /Product Specifications

厚度 Thickness	宽度 Width	卷芯内径 Roll Core Inner Diameter
12μm~200μm	可根据需求定制 Can Be Customized	小: 76mm 大: 152mm

注:可根据客户需求生产,常见宽度1005mm、1035mm、1050mm、1080mm、1095mm等。

Note: Can be customized, common width is 1005mm/1035mm/1050mm/1080mm/1095mm, etc.

产品应用 /Product Application

适用于蓝色作为基材的离型膜、保护膜、电子标识、印刷、装饰等领域。

Suitable for release film, protective film, electronic identification, printing, decoration and other fields with blue as the substrate.



典型物理性能 /Typical Physical Performance

项目 Project	单位 Unit	检测值 Detection Value				检测方法 Detection Method
厚度 Thickness	μm	12~25	36	75	100~200	GB/T13542.2
平均厚度偏差 Mean Thickness Deviation	μm	±2%		±3%		
拉伸强度 Tensile Strength	MD	Mpa	MD≥160	MD≥140		GB/T13542.2
	TD	Mpa	TD≥160	TD≥140		
断裂伸长 Breaking Elongation	MD	%	MD≥90			GB/T13542.2
	TD	%	TD≥90			
热收缩率 150°C/30min Thermal Shrinkage 150 °C/ 30 min	MD	%	0.7≤MD≤1.7		0.7≤MD≤1.5	GB/T13542.2
	TD	%	TD≤0.3			
透光率 Transmittance		%	50~80			GB/T2410
雾度 The Fog Degree		%	3~10			
润湿张力 Wetting Tension	有 Have	mN/m	≥52			GB/T14216
	无 Non	mN/m	≥38			

说明:1.MD为纵向,TD为横向。

2.以上是检测典型值,不是保证值,典型值可根据客户要求适当调整。

Note:1.MD means longitudinal tensile, TD means transverse tensile.

2.The above are typical values instead of guarantee value. Typical values can be adjusted according to customer's requirements.

ANTISTATIC BLUE FILM

抗静电蓝膜 /

产品型号 /Product Model

L701TT、L702TT、L703TT、L705TT、L706TT、L709TT(单面抗静电/双面抗静电)

L701TT, L702TT, L703TT, L705TT, L706TT, L709TT (single-sided anti-static/double-sided anti-static)

产品性能特点 /Product Performance Features

蓝膜抗静电系列产品由特制原料经在线涂布加工工艺制成,除了具有良好的化学性能外,主要还有:

- 优异的抗静电效果,阻值可在 10^5 - 10^{10} 范围内调控
- 良好的表面光泽度和表观性能
- 涂布印刷复合性能优良

The blue film anti-static series products are made from specially made raw materials through online coating processing technology. In addition to having good chemical properties, they mainly include:

- Excellent anti-static effect, with resistance adjustable within the range of 10^5 - 10^{10}
- Good surface glossiness and apparent performance
- Excellent composite performance of coating printing

典型物理性能 /Typical Physical Performance

项目 Project	单位 Unit	检测值 Detection Value	检测方法 Detection Method	
厚度 Thickness	μm	12-25 36 75 100-200	GB/T13542.2	
平均厚度偏差 Mean Thickness Deviation	μm	±2% ±3%		
拉伸强度 Tensile Strength	MD	Mpa	MD≥160 MD≥140	GB/T13542.2
	TD	Mpa	TD≥160 TD≥140	
断裂伸长 Breaking Elongation	MD	%	MD≥90	GB/T13542.2
	TD	%	TD≥90	
热收缩率 150°C/30min Thermal Shrinkage 150°C/30 min	MD	%	0.7≤MD≤1.7 0.7≤MD≤1.5	GB/T13542.2
	TD	%	TD≤0.3	
透光率 Transmittance	%	50-80	GB/T2410	
雾度 The Fog Degree	%	3-10		
表面阻值 Surface resistance value	单抗 Single antibody	Ω	10^5 - 10^6	BK485
	双抗 Dual antibody	Ω	内面: 10^5 - 10^6 外面: 10^6 - 10^8	

说明:1.MD为纵向,TD为横向。
2.以上是检测典型值,不是保证值,典型值可根据客户要求适当调整。

Note:1.MD means longitudinal tensile, TD means transverse tensile.
2.The above are typical values instead of guarantee value. Typical values can be adjusted according to customer's requirements.



BLUE FILM

蓝膜 /

产品型号 /Product Model

L711、L712、L713、L715、L716(单面/双面/无电晕)

L711, L712, L713, L715, L716 (single/double/no corona)

产品性能特点 /Product Performance Features

蓝膜由特制原料经复杂加工工艺制成,除了具有良好的化学性能外,主要还有:

- 优异的拉伸性能
- 良好的表面光泽度和表观性能
- 涂布印刷复合性能优良

Blue film is made from specially made raw materials through complex processing techniques. In addition to having good chemical properties, it mainly includes:

- Excellent tensile performance
- Good surface glossiness and apparent performance
- Excellent composite performance of coating printing

典型物理性能 /Typical Physical Performance

项目 Project	单位 Unit	检测值 Detection Value	检测方法 Detection Method	
厚度 Thickness	μm	12-36 50-100	GB/T13542.2	
平均厚度偏差 Mean Thickness Deviation	μm	±2% ±3%		
拉伸强度 Tensile Strength	MD	Mpa	MD≥160 MD≥140	GB/T13542.2
	TD	Mpa	TD≥160 TD≥140	
断裂伸长 Breaking Elongation	MD	%	MD≥90	GB/T13542.2
	TD	%	TD≥90	
热收缩率 150°C/30min Thermal Shrinkage 150°C/30 min	MD	%	0.7≤MD≤1.7 0.7≤MD≤1.5	GB/T13542.2
	TD	%	TD≤0.3	
透光率 Transmittance	%	20-60	GB/T2410	
雾度 The Fog Degree	%	3-30		
润湿张力 Wetting Tension	有 Have	mN/m	≥52	GB/T14216
	无 Non	mN/m	≥38	

说明:1.MD为纵向,TD为横向。
2.以上是检测典型值,不是保证值,典型值可根据客户要求适当调整。

Note:1.MD means longitudinal tensile, TD means transverse tensile.
2.The above are typical values instead of guarantee value. Typical values can be adjusted according to customer's requirements.



YELLOW FILM 黄膜 /



产品型号 /Product Model

YE901、YE902、YE903、YE904(单面 / 双面 / 无电晕)
YE901, YE902, YE903, YE904 (single/double/no corona)

产品性能特点 /Product Performance Features

黄膜由特制原料经复杂加工工艺制成,除了具有良好的化学性能外,主要还有:

- 色泽温和不掉色
- 表面光泽度佳

Yellow film is made from special raw materials through complex processing techniques. In addition to having good chemical properties, it mainly includes:

- Mild color without fading
- Excellent surface glossiness

产品规格 /Product Specifications

厚度 Thickness	宽度 Width	卷芯内径 Roll Core Inner Diameter
25μm~100μm	可根据需求定制 Can Be Customized	小: 76mm 大: 152mm

注:可根据客户需求生产,常见宽度1205mm、1560mm等。

Note: Can be customized, common width is 1205mm/1560mm, etc.

产品应用 /Product Application

适用电子电器、装饰、印刷复合等多种领域。

Suitable for various fields such as electronic appliances, decoration, printing and composite.



典型物理性能 /Typical Physical Performance

项目 Project	单位 Unit	检测值 Detection Value		检测方法 Detection Method
厚度 Thickness	μm	25~50	75~100	GB/T13542.2
平均厚度偏差 Mean Thickness Deviation	μm	±2%	±3%	
拉伸强度 Tensile Strength	MD	Mpa	MD≥160	GB/T13542.2
	TD	Mpa	TD≥160	
断裂伸长 Breaking Elongation	MD	75%	MD≥90	GB/T13542.2
	TD	%	TD≥90	
热收缩率 150°C/30min Thermal Shrinkage 150 °C/ 30 min	MD	%	0.7≤MD≤1.7	GB/T13542.2
	TD	%	TD≤0.3	
透光率 Transmittance	%	60~85	30~75	GB/T2410
雾度 The Fog Degree	%	1~10	5~20	
润湿张力 Wetting Tension	有 Have	mN/m	≥52	GB/T14216
	无 Non	mN/m	≥38	

说明:1.MD为纵向,TD为横向。

2.以上是检测典型值,不是保证值,典型值可根据客户要求适当调整。

Note:1.MD means longitudinal tensile, TD means transverse tensile.

2.The above are typical values instead of guarantee value. Typical values can be adjusted according to customer's requirements.

RED
FILM
红膜 /



产品型号 /Product Model

R601、R603(单面 / 双面 / 无电晕)
R601, R603 (single/double/no corona)

产品性能特点 /Product Performance Features

红膜由特制原料经复杂加工工艺制成,除了具有良好的化学性能外,主要还有:

- 色泽温和不掉色
- 表面光泽度佳

Red film is made from special raw materials through complex processing techniques. In addition to having good chemical properties, it mainly includes:

- Mild color without fading
- Excellent surface glossiness

产品规格 /Product Specifications

厚度 Thickness	宽度 Width	卷芯内径 Roll Core Inner Diameter
25μm~200μm	可根据需求定制 Can Be Customized	小: 76mm 大: 152mm

注:可根据客户需求生产,常见宽度1205mm、1560mm等。

Note: Can be customized, common width is 1205mm/1560mm, etc.

产品应用 /Product Application

适用电子电器、装饰、印刷复合等多种领域。

Suitable for various fields such as electronic appliances, decoration, printing and composite.



典型物理性能 /Typical Physical Performance

项目 Project	单位 Unit	检测值 Detection Value	检测方法 Detection Method
厚度 Thickness	μm	25~50	75~200
平均厚度偏差 Mean Thickness Deviation	μm	±2%	±3%
拉伸强度 Tensile Strength	MD	Mpa	MD≥160
	TD	Mpa	TD≥160
断裂伸长 Breaking Elongation	MD	75%	MD≥90
	TD	%	TD≥90
热收缩率 150°C/30min Thermal Shrinkage 150°C/30 min	MD	%	0.7≤MD≤1.7
	TD	%	TD≤0.3
透光率 Transmittance	%	60~85	30~75
雾度 The Fog Degree	%	1~3	3~8
润湿张力 Wetting Tension	有 Have	mN/m	≥52
	无 Non	mN/m	≥38

说明:1.MD为纵向,TD为横向。

2.以上是检测典型值,不是保证值,典型值可根据客户要求适当调整。

Note: 1. MD means longitudinal tensile, TD means transverse tensile.

2. The above are typical values instead of guarantee value. Typical values can be adjusted according to customer's requirements.

GREEN
FILM
绿膜 /



产品型号 /Product Model

G801(单面 / 双面 / 无电晕)
G801 (single/double/no corona)

产品性能特点 /Product Performance Features

绿膜由特制原料经复杂加工工艺制成,除了具有良好的化学性能外,主要还有:

- 色泽温和不掉色
- 表面光泽度佳

Green film is made from special raw materials through complex processing techniques. In addition to having good chemical properties, it mainly includes:

- Mild color without fading
- Excellent surface glossiness

产品规格 /Product Specifications

厚度 Thickness	宽度 Width	卷芯内径 Roll Core Inner Diameter
25μm~200μm	可根据需求定制 Can Be Customized	小: 76mm 大: 152mm

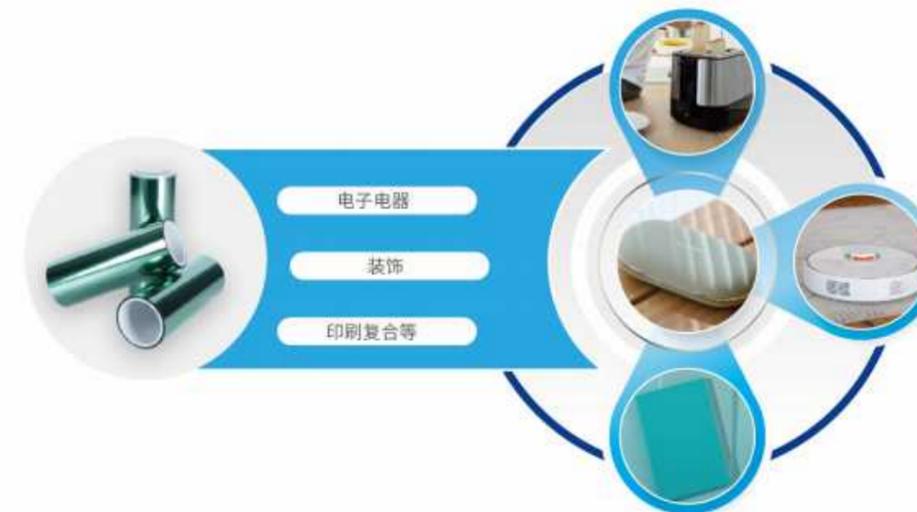
注:可根据客户需求生产,常见宽度1205mm、1560mm等。

Note: Can be customized, common width is 1205mm/1560mm, etc.

产品应用 /Product Application

适用电子电器、装饰、印刷复合等多种领域。

Suitable for various fields such as electronic appliances, decoration, printing and composite.



典型物理性能 /Typical Physical Performance

项目 Project	单位 Unit	检测值 Detection Value	检测方法 Detection Method
厚度 Thickness	μm	25~50	75~200
平均厚度偏差 Mean Thickness Deviation	μm	±2%	±3%
拉伸强度 Tensile Strength	MD	Mpa	MD≥160
	TD	Mpa	TD≥160
断裂伸长 Breaking Elongation	MD	75%	MD≥90
	TD	%	TD≥90
热收缩率 150°C/30min Thermal Shrinkage 150 °C/ 30 min	MD	%	0.7≤MD≤1.7
	TD	%	TD≤0.3
透光率 Transmittance	%	75~85	60~75
雾度 The Fog Degree	%	2~4	4~8
润湿张力 Wetting Tension	有 Have	mN/m	≥52
	无 Non	mN/m	≥38

说明:1.MD为纵向,TD为横向。

2.以上是检测典型值,不是保证值,典型值可根据客户要求适当调整。

Note:1.MD means longitudinal tensile, TD means transverse tensile.

2.The above are typical values instead of guarantee value. Typical values can be adjusted according to customer's requirements.

DRY
FILM
干膜 /



产品型号 /Product Model

T31(无电晕)
T31 (no corona)

产品性能特点 /Product Performance Features

干膜由特殊原料配方及复杂加工工艺制成，除了具有较好的化学性能外，主要还有：

- 粗糙度低，平滑性好
- 表面平整性良好
- 内外部杂质水平控制较好

Dry film is made from special raw material formulas and complex processing techniques. In addition to having good chemical properties, it mainly includes:

- Low roughness and good smoothness
- Good surface smoothness
- Good control of internal and external impurity levels.

产品规格 /Product Specifications

厚度 Thickness	宽度 Width	卷芯内径 Roll Core Inner Diameter
15μm~16μm	可根据需求定制 Can Be Customized	小: 76mm 大: 152mm

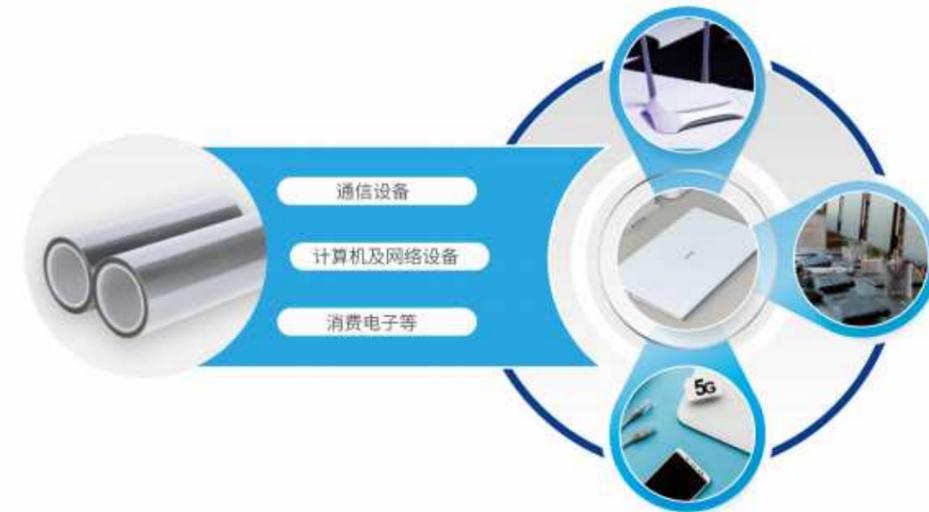
注: 可根据客户需求生产, 常见宽度1260mm、1780mm、1880mm等。

Note: Can be customized, common width is 1260mm/1780mm/1880mm, etc.

产品应用 /Product Application

适用于通信设备、计算机及网络设备、消费电子等领域。

Suitable for communication equipment, computer and network equipment, consumer electronics, and other fields.



典型物理性能 /Typical Physical Performance

项目 Project	单位 Unit	检测值 Detection Value	检测方法 Detection Method	
厚度 Thickness	μm	15.5	GB/T13542.2	
平均厚度偏差 Mean Thickness Deviation	μm	±2%		
拉伸强度 Tensile Strength	MD	Mpa	MD≥150	GB/T13542.2
	TD	Mpa	TD≥170	
断裂伸长 Breaking Elongation	MD	%	60≤MD≤180	GB/T13542.2
	TD	%	60≤TD≤180	
热收缩率 150°C/30min Thermal Shrinkage 150 °C/ 30 min	MD	%	0.8≤MD≤2	GB/T13542.2
	TD	%	TD≤2.1	
透光率 Transmittance	%	84~91	GB/T2410	
雾度 The Fog Degree	%	1~2		
润湿张力 Wetting Tension	无 Non	mN/m	≥38	GB/T14216

说明: 1.MD为纵向, TD为横向。

2. 以上是检测典型值, 不是保证值, 典型值可根据客户要求适当调整。

Note: 1.MD means longitudinal tensile, TD means transverse tensile.

2.The above are typical values instead of guarantee value. Typical values can be adjusted according to customer's requirements.

OCA OPTICAL ADHESIVE BASE FILM

OCA 光学胶用基膜 /



产品型号 /Product Model

T41(单面 / 双面 / 无电晕)
T41 (single/double/no corona)

产品性能特点 /Product Performance Features

OCA 用基膜由特殊原料配方及复杂加工工艺制成,除了具有较好的化学性能外,主要还有:

- 粗糙度低,平滑性好
- 表面平整性良好
- 热稳定性好

The base film for OCA is made from special raw material formulas and complex processing techniques. In addition to having good chemical properties, it mainly includes:

- Low roughness and good smoothness
- Good surface smoothness
- Good thermal stability

产品规格 /Product Specifications

厚度 Thickness	宽度 Width	卷芯内径 Roll Core Inner Diameter
50μm~125μm	可根据需求定制 Can Be Customized	小: 76mm 大: 152mm

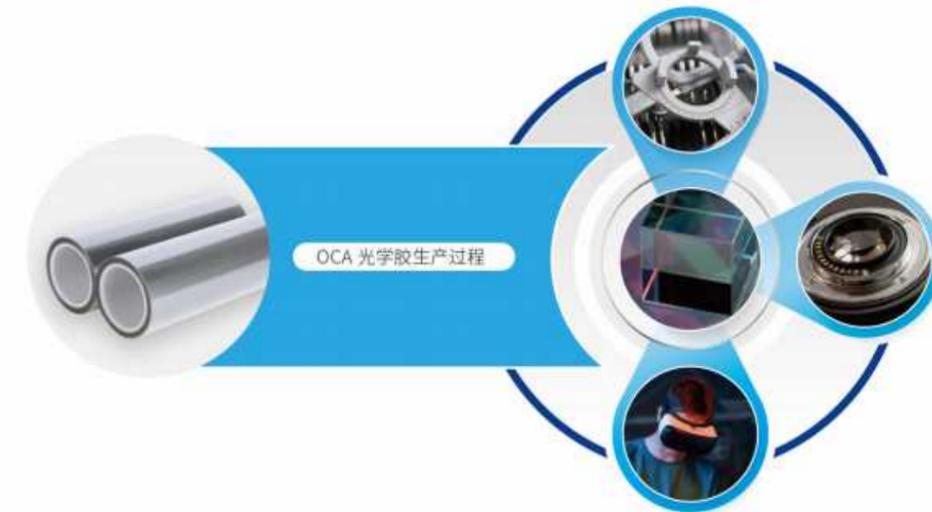
注:可根据客户需求生产,常见宽度1045mm、1095mm、1160mm、1280mm等。

Note: Can be customized, common width is 1045mm/1095mm/1160mm/1280mm, etc.

产品应用 /Product Application

适用于 OCA 光学胶生产过程。

Suitable for the OCA optical adhesive production process.



典型物理性能 /Typical Physical Performance

项目 Project	单位 Unit	检测值 Detection Value	检测方法 Detection Method
厚度 Thickness	μm	50 75 125	GB/T13542.2
平均厚度偏差 Mean Thickness Deviation	μm	±2% ±3%	
拉伸强度 Tensile Strength	MD Mpa	MD≥160	GB/T13542.2
	TD Mpa	TD≥160	
断裂伸长 Breaking Elongation	MD %	MD≥90	GB/T13542.2
	TD %	TD≥90	
热收缩率 150°C/30min Thermal Shrinkage 150 °C/ 30 min	MD %	0.7≤MD≤1.5	GB/T13542.2
	TD %	TD≤0.3	
透光率 Transmittance	%	84-91	GB/T2410
雾度 The Fog Degree	%	3-5	
润湿张力 Wetting Tension	有 Have mN/m	≥52	GB/T14216
	无 Non mN/m	≥38	

说明:1.MD为纵向,TD为横向。

2.以上是检测典型值,不是保证值,典型值可根据客户要求适当调整。

Note:1.MD means longitudinal tensile, TD means transverse tensile.

2.The above are typical values instead of guarantee value. Typical values can be adjusted according to customer's requirements.

BASE FOR POLARIZING PLATE FILM

偏光片用基膜 /



产品型号 /Product Model

T51(单面 / 双面 / 无电晕)
T51 (single/double/no corona)

产品性能特点 /Product Performance Features

偏光片用基膜由特殊原料配方及复杂加工工艺制成，除了具有较好的化学性能外，主要还有：

- 洁净度高、杂质少
- 满足后加工的低配向角
- 热稳定性好

The base film for polarizing films is made of special raw material formulas and complex processing techniques. In addition to having good chemical properties, it mainly includes:

- High cleanliness with few impurities
- Satisfy the low alignment angle for post-processing
- Good thermal stability

产品规格 /Product Specifications

厚度 Thickness	宽度 Width	卷芯内径 Roll Core Inner Diameter
19μm~50μm	可根据需求定制 Can Be Customized	小: 76mm 大: 152mm

注: 可根据客户需求生产, 常见宽度1320mm、1480mm、2200mm等。

Note: Can be customized, common width is 1320mm/1480mm/2200mm, etc.

产品应用 /Product Application

适用偏光片生产过程中的保护膜和离型膜。

Suitable for protective film and release film in the production process of polarizers.



典型物理性能 /Typical Physical Performance

项目 Project	单位 Unit	检测值 Detection Value	检测方法 Detection Method	
厚度 Thickness	μm	19 38 50	GB/T13542.2	
平均厚度偏差 Mean Thickness Deviation	μm	±2%		
拉伸强度 Tensile Strength	MD Mpa	MD ≥ 160	MD ≥ 140	GB/T13542.2
	TD Mpa	TD ≥ 160	TD ≥ 140	
断裂伸长 Breaking Elongation	MD %	MD ≥ 90		GB/T13542.2
	TD %	TD ≥ 90		
热收缩率 150°C/30min Thermal Shrinkage 150 °C/ 30 min	MD %	0.7 ≤ MD ≤ 1.5		GB/T13542.2
	TD %	TD ≤ 0.5		
透光率 Transmittance	%	84~91		GB/T2410
雾度 The Fog Degree	%	3~5		
润湿张力 Wetting Tension	有 Have	≥ 56		GB/T14216
	无 Non	≥ 38		

说明: 1.MD为纵向, TD为横向。

2.以上是检测典型值, 不是保证值, 典型值可根据客户要求适当调整。

Note: 1.MD means longitudinal tensile, TD means transverse tensile.

2.The above are typical values instead of guarantee value. Typical values can be adjusted according to customer's requirements.

MLCC BASE FILM

MLCC 用基膜 /



产品型号 /Product Model

T61(单面电晕)
T61 (single side corona)

产品性能特点 /Product Performance Features

MLCC 用基膜由特殊原料配方及复杂加工工艺制成，除了具有较好的化学性能外，主要还有：

- 表面粗糙度小
- 平整性好
- 热稳定性好

The base film for MLCC is made from special raw material formulas and complex processing techniques. In addition to having good chemical properties, it mainly includes:

- Low surface roughness
- Good flatness
- Good thermal stability

产品规格 /Product Specifications

厚度 Thickness	宽度 Width	卷芯内径 Roll Core Inner Diameter
19μm~50μm	可根据需求定制 Can Be Customized	小: 76mm 大: 152mm

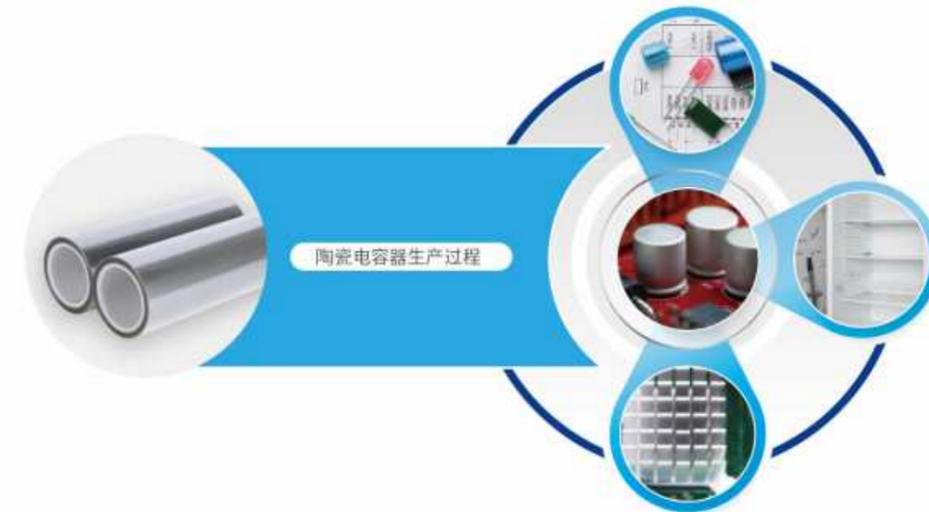
注: 可根据客户需求生产, 常见宽度 1325mm、1410mm、1650mm 等。

Note: Can be customized, common width is 1325mm/1410mm/1650mm, etc.

产品应用 /Product Application

适用陶瓷电容器生产过程。

Suitable for the production process of ceramic capacitors.



典型物理性能 /Typical Physical Performance

项目 Project	单位 Unit	检测值 Detection Value	检测方法 Detection Method
厚度 Thickness	μm	19 38 50	GB/T13542.2
平均厚度偏差 Mean Thickness Deviation	μm	±2%	
拉伸强度 Tensile Strength	MD Mpa	MD ≥ 160	GB/T13542.2
	TD Mpa	TD ≥ 160	
断裂伸长 Breaking Elongation	MD %	MD ≥ 90	GB/T13542.2
	TD %	TD ≥ 90	
热收缩率 150°C/30min Thermal Shrinkage 150 °C/ 30 min	MD %	0.7 ≤ MD ≤ 1.5	GB/T13542.2
	TD %	TD ≤ 0.5	
透光率 Transmittance	%	84~91	GB/T2410
雾度 The Fog Degree	%	3~5	
润湿张力 Wetting Tension	有 Have mN/m	≥ 56	GB/T14216

说明: 1.MD为纵向, TD为横向。

2. 以上是检测典型值, 不是保证值, 典型值可根据客户要求适当调整。

Note: 1.MD means longitudinal tensile, TD means transverse tensile.

2.The above are typical values instead of guarantee value. Typical values can be adjusted according to customer's requirements.

RELEASE PROTECTION FILM

离型保护膜 /

产品型号 /Product Model

T108、T11(单面/双面/无电晕)
T108, T11 (single/double/no corona)

产品性能特点 /Product Performance Features

离型膜除了具有较好的化学性能外, 主要还有:

- 拉伸强度优异
- 表面平整性良好
- 热稳定性较好

In addition to having good chemical properties, the release film mainly includes:

- Excellent tensile strength
- Good surface smoothness
- Good thermal stability

典型物理性能 /Typical Physical Performance

项目 Project	单位 Unit	检测值 Detection Value	检测方法 Detection Method	
厚度 Thickness	μm	12-25 36 75 100 125	GB/T13542.2	
平均厚度偏差 Mean Thickness Deviation	μm	±2% ±3%		
拉伸强度 Tensile Strength	MD	Mpa	MD≥160 MD≥140	GB/T13542.2
	TD	Mpa	TD≥160 TD≥140	
断裂伸长 Breaking Elongation	MD	%	MD≥90	GB/T13542.2
	TD	%	TD≥90	
热收缩率 150°C/30min Thermal Shrinkage 150 °C/ 30 min	MD	%	0.7≤MD≤1.7 0.7≤MD≤1.5	GB/T13542.2
	TD	%	TD≤0.3	
透光率 Transmittance	%	84-91	GB/T2410	
雾度 The Fog Degree	%	2-4		
润湿张力 Wetting Tension	有 Have	mN/m	≥56	GB/T14216
	无 Non	mN/m	≥38	

说明: 1.MD为纵向, TD为横向。
2. 以上是检测典型值, 不是保证值, 典型值可根据客户要求适当调整。

Note: 1.MD means longitudinal tensile, TD means transverse tensile.

2.The above are typical values instead of guarantee value. Typical values can be adjusted according to customer's requirements.



产品规格 /Product Specifications

厚度 Thickness	宽度 Width	卷芯内径 Roll Core Inner Diameter
12μm~330μm	可根据需求定制 Can Be Customized	小: 76mm 大: 152mm

注: 可根据客户需求生产, 常见宽度1045mm、1095mm、1160mm、1280mm等。

Note: Can be customized, common width is 1045mm/1095mm/1160mm/1280mm, etc.

产品应用 /Product Application

适用电子电器、装饰、印刷复合等多种领域。

Suitable for various fields such as electronic appliances, decoration, printing and composite.

HIGH GLOSS FILM

高亮膜 /

产品型号 /Product Model

CT101、CT103、CT105、T21(单面/双面/无电晕)
CT101, CT103, CT105, T21 (single/double/no corona)

产品性能特点 /Product Performance Features

高亮膜除了具有较好的化学性能外, 主要还有:

- 雾度低、透明度高
- 表面平整性良好
- 洁净度高、杂质少

In addition to having good chemical properties, the high gloss film mainly includes:

- Low haze and high transparency
- Good surface smoothness
- High cleanliness with few impurities

典型物理性能 /Typical Physical Performance

项目 Project	单位 Unit	检测值 Detection Value	检测方法 Detection Method	
厚度 Thickness	μm	12-25 36 75 100 125	GB/T13542.2	
平均厚度偏差 Mean Thickness Deviation	μm	±2% ±3%		
拉伸强度 Tensile Strength	MD	Mpa	MD≥160 MD≥140	GB/T13542.2
	TD	Mpa	TD≥160 TD≥140	
断裂伸长 Breaking Elongation	MD	%	MD≥90	GB/T13542.2
	TD	%	TD≥90	
热收缩率 150°C/30min Thermal Shrinkage 150 °C/ 30 min	MD	%	0.7≤MD≤1.7 0.7≤MD≤1.5	GB/T13542.2
	TD	%	TD≤0.3	
透光率 Transmittance	%	84-91	GB/T2410	
雾度 The Fog Degree	%	≤1.7		
润湿张力 Wetting Tension	有 Have	mN/m	≥56	GB/T14216
	无 Non	mN/m	≥38	

说明: 1.MD为纵向, TD为横向。
2. 以上是检测典型值, 不是保证值, 典型值可根据客户要求适当调整。

Note: 1.MD means longitudinal tensile, TD means transverse tensile.

2.The above are typical values instead of guarantee value. Typical values can be adjusted according to customer's requirements.



WHITE FILM 白膜 /

产品型号 /Product Model

W501、W502(单面 / 双面 / 无电晕)
W501, W502 (single/double/no corona)

产品性能特点 /Product Performance Features

白膜由特制原料经复杂加工工艺制成,除了具有良好的化学性能外,主要还有:

- 低透光率
- 表面光泽度好,有优良的遮光效果
- 具有良好的复合和印刷性能

White film is made from special raw materials through complex processing techniques. In addition to having good chemical properties, it mainly includes:

- Low transmittance
- Good surface glossiness and excellent shading effect
- Has good composite and printing performance

典型物理性能 /Typical Physical Performance

项目 Project	单位 Unit	检测值 Detection Value	检测方法 Detection Method	
厚度 Thickness	μm	12~25 36~75 100~200	GB/T13542.2	
平均厚度偏差 Mean Thickness Deviation	μm	±2% ±3%		
拉伸强度 Tensile Strength	MD	Mpa	MD≥160 MD≥140	GB/T13542.2
	TD	Mpa	TD≥160 TD≥140	
断裂伸长 Breaking Elongation	MD	%	MD≥90	GB/T13542.2
	TD	%	TD≥80	
热收缩率 150°C/30min Thermal Shrinkage 150 °C/ 30 min	MD	%	0.7≤MD≤1.7 0.7≤MD≤1.7	GB/T13542.2
	TD	%	TD≤0.3	
透光率 Transmittance	%	15~25 10~20 10~20	GB/T2410	
雾度 The Fog Degree	%	85~93 85~93 85~93		
表面光泽度 Surface Glossiness	°	70~110 (可定制)		60°
润湿张力 Wetting Tension	有 Have	mN/m	≥52	GB/T14216
	无 Non	mN/m	≥38	

说明:1.MD为纵向,TD为横向。
2.以上是检测典型值,不是保证值,典型值可根据客户要求适当调整。

Note: 1.MD means longitudinal tensile, TD means transverse tensile.
2.The above are typical values instead of guarantee value. Typical values can be adjusted according to customer's requirements.



SOLAR BACKPANEL FILM 太阳能背板膜 /

产品型号 /Product Model

TB101(单面 / 双面 / 无电晕)
TB101 (single/double/no corona)

产品性能特点 /Product Performance Features

太阳能背板膜特制原料经复杂加工工艺制成,除了具有较好的化学性能外,主要还有:

- 耐老化性能好
- 后道加工匹配性好

The special raw materials for solar panel film are made through complex processing techniques, which not only have good chemical properties, but also mainly include:

- Good aging resistance
- Good matching of subsequent processing

典型物理性能 /Typical Physical Performance

项目 Project	单位 Unit	检测值 Detection Value	检测方法 Detection Method	
厚度 Thickness	μm	250~350	GB/T13542.2	
平均厚度偏差 Mean Thickness Deviation	μm	±2%		
拉伸强度 Tensile Strength	MD	Mpa	MD≥140	GB/T13542.2
	TD	Mpa	TD≥140	
断裂伸长 Breaking Elongation	MD	%	MD≥100	GB/T13542.2
	TD	%	TD≥90	
热收缩率 150°C/30min Thermal Shrinkage 150 °C/ 30 min	MD	%	0.6≤MD≤1.0	GB/T13542.2
	TD	%	TD≤0.5	
润湿张力 Wetting Tension	有 Have 无 Non	mN/m	≥56	GB/T2410
耐老化性能 Aging Resistance Performance			PCT 48小时	GB/T14216

说明:1.MD为纵向,TD为横向。
2.以上是检测典型值,不是保证值,典型值可根据客户要求适当调整。

Note: 1.MD means longitudinal tensile, TD means transverse tensile.
2.The above are typical values instead of guarantee value. Typical values can be adjusted according to customer's requirements.



产品规格 /Product Specifications

厚度 Thickness	宽度 Width	卷芯内径 Roll Core Inner Diameter
250μm~350μm	可根据需求定制 Can Be Customized	小: 76mm 大: 152mm

注:可根据客户需求生产,常见宽度1045mm、1090mm等。

Note: Can be customized, common width is 1045mm/1090mm, etc.

产品应用 /Product Application

适用于太阳能背板领域。

Suitable for the field of solar panels.

DOUBLE SIDED MATTE FILM

双面亚光膜 /

产品型号 /Product Model

Y201、Y202、Y203、Y204、Y208、Y209(单面/双面/无电晕)

Y201, Y202, Y203, Y204, Y208, Y209 (single/double/no corona)

产品性能特点 /Product Performance Features

亚光膜由特制原料经复杂加工工艺制成,除了具有良好的化学性能外,主要还有:

- 色泽温和不掉色粉
- 表面光泽度佳

The matte film is made from specially made raw materials through complex processing techniques. In addition to having good chemical properties, it mainly includes:

- Mild color and non fading powder
- Excellent surface glossiness

典型物理性能 /Typical Physical Performance

项目 Project	单位 Unit	检测值 Detection Value		检测方法 Detection Method
厚度 Thickness	μm	12~50	75~200	GB/T13542.2
平均厚度偏差 Mean Thickness Deviation	μm	±2%	±3%	
拉伸强度 Tensile Strength	MD	Mpa	MD≥160	GB/T13542.2
	TD	Mpa	TD≥160	
断裂伸长 Breaking Elongation	MD	75%	MD≥90	GB/T13542.2
	TD	%	TD≥90	
热收缩率 150°C/30min Thermal Shrinkage 150°C/30 min	MD	%	0.7≤MD≤1.7	GB/T13542.2
	TD	%	0.7≤MD≤1.7	
透光率 Transmittance	%	60~85	45~75	GB/T2410
雾度 The Fog Degree	%	70~95	80~95	
表面光泽度 Surface Glossiness	°	15~60(可定制)		60°
润湿张力 Wetting Tension	有 Have	mN/m	≥52	GB/T14216
	无 Non	mN/m	≥38	

说明:1.MD为纵向,TD为横向。
2.以上是检测典型值,不是保证值,典型值可根据客户要求适当调整。

Note: 1.MD means longitudinal tensile, TD means transverse tensile.
2.The above are typical values instead of guarantee value. Typical values can be adjusted according to customer's requirements.



SINGLE SIDED MATTE FILM

单面亚光膜 /

产品型号 /Product Model

Y211、Y212、Y214(单面/双面/无电晕)

Y211, Y212, Y214 (single/double/no corona)

产品性能特点 /Product Performance Features

单面亚光膜由特制原料经复杂加工工艺制成,除了具有良好的化学性能外,主要还有:

- 色泽温和不掉粉
- 表面光泽度佳

Single sided matte film is made from specially made raw materials through complex processing technology. In addition to having good chemical properties, it mainly includes:

- Mild color without shedding powder
- Excellent surface glossiness

典型物理性能 /Typical Physical Performance

项目 Project	单位 Unit	检测值 Detection Value		检测方法 Detection Method
厚度 Thickness	μm	12~36	50~75	GB/T13542.2
平均厚度偏差 Mean Thickness Deviation	μm	±2%	±3%	
拉伸强度 Tensile Strength	MD	Mpa	MD≥160	GB/T13542.2
	TD	Mpa	TD≥160	
断裂伸长 Breaking Elongation	MD	75%	MD≥90	GB/T13542.2
	TD	%	TD≥90	
热收缩率 150°C/30min Thermal Shrinkage 150°C/30 min	MD	%	0.7≤MD≤1.7	GB/T13542.2
	TD	%	0.7≤MD≤1.7	
透光率 Transmittance	%	60~85	45~75	GB/T2410
雾度 The Fog Degree	%	70~95	80~95	
表面光泽度 Surface Glossiness	亚面	15~60		60°
	光面	100~230		
润湿张力 Wetting Tension	有 Have	mN/m	≥52	GB/T14216
	无 Non	mN/m	≥38	

说明:1.MD为纵向,TD为横向。
2.以上是检测典型值,不是保证值,典型值可根据客户要求适当调整。

Note: 1.MD means longitudinal tensile, TD means transverse tensile.
2.The above are typical values instead of guarantee value. Typical values can be adjusted according to customer's requirements.



BLACK FILM 黑膜 /

产品型号 /Product Model

B403、B405、B406(单面/双面/无电晕)
B403, B405, B406 (single/double/no corona)

产品性能特点 /Product Performance Features

黑膜除了具有较好的化学性能外, 主要还有:

- 遮蔽性能好
- 表面平整性良好
- 洁净度高、杂质少

In addition to having good chemical properties, black film mainly includes:

- Good shielding performance
- Good surface smoothness
- High cleanliness with few impurities

典型物理性能 /Typical Physical Performance

项目 Project	单位 Unit	检测值 Detection Value	检测方法 Detection Method	
厚度 Thickness	μm	12 25~75 100~200	GB/T13542.2	
平均厚度偏差 Mean Thickness Deviation	μm	±2% ±3%		
拉伸强度 Tensile Strength	MD Mpa	MD≥160 MD≥140	GB/T13542.2	
	TD Mpa	TD≥160 TD≥140		
断裂伸长 Breaking Elongation	MD %	MD≥90	GB/T13542.2	
	TD %	TD≥80		
热收缩率 150°C/30min Thermal Shrinkage 150°C/30 min	MD %	0.9≤MD≤1.7 0.7≤MD≤1.7	GB/T13542.2	
	TD %	TD≤0.3		
透光率 Transmittance	%	0	GB/T2410	
雾度 The Fog Degree	%	85-93 85-93 85-93		
表面光泽度 Surface Glossiness	°	60~110	60°	
润湿张力 Wetting Tension	有 Have	mN/m	≥52	GB/T14216
	无 Non	mN/m	≥38	

说明: 1.MD为纵向, TD为横向。
2.以上是检测典型值, 不是保证值, 典型值可根据客户要求适当调整。

Note: 1.MD means longitudinal tensile, TD means transverse tensile.
2.The above are typical values instead of guarantee value. Typical values can be adjusted according to customer's requirements.



FLAME RETARDANT FILM 阻燃膜 /

产品型号 /Product Model

T121、B423、W521(单面/双面/无电晕)
T121, B423, W521 (single/double/no corona)

产品性能特点 /Product Performance Features

阻燃膜由特殊的涂液及复杂的涂覆工艺制成, 除了具有较好的化学性能外, 主要还有:

- 经 UL 认证 (编号: 516097)
- 阻燃性能好
- 阻燃等级可调控

Flame retardant film is made from special coating liquids and complex coating processes. In addition to having good chemical properties, it mainly includes:

- UL certified (number: 516097)
- Good flame retardant performance
- Flame retardant level adjustable

典型物理性能 /Typical Physical Performance

项目 Project	单位 Unit	检测值 Detection Value	检测方法 Detection Method	
厚度 Thickness	μm	25~350	GB/T13542.2	
平均厚度偏差 Mean Thickness Deviation	μm	±2%		
拉伸强度 Tensile Strength	MD Mpa	MD≥140	GB/T13542.2	
	TD Mpa	TD≥140		
断裂伸长 Breaking Elongation	MD %	MD≥100	GB/T13542.2	
	TD %	TD≥90		
热收缩率 150°C/30min Thermal Shrinkage 150°C/30 min	MD %	0.6≤MD≤1.7	GB/T13542.2	
	TD %	TD≤0.5		
润湿张力 Wetting Tension	有 Have 无 Non	mN/m	≥56	GB/T2410
阻燃等级 Flame Retardant Level		VTM-0、VTM-1、VTM-2	UL 94	

说明: 1.MD为纵向, TD为横向。
2.以上是检测典型值, 不是保证值, 典型值可根据客户要求适当调整。
Note: 1.MD means longitudinal tensile, TD means transverse tensile.
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