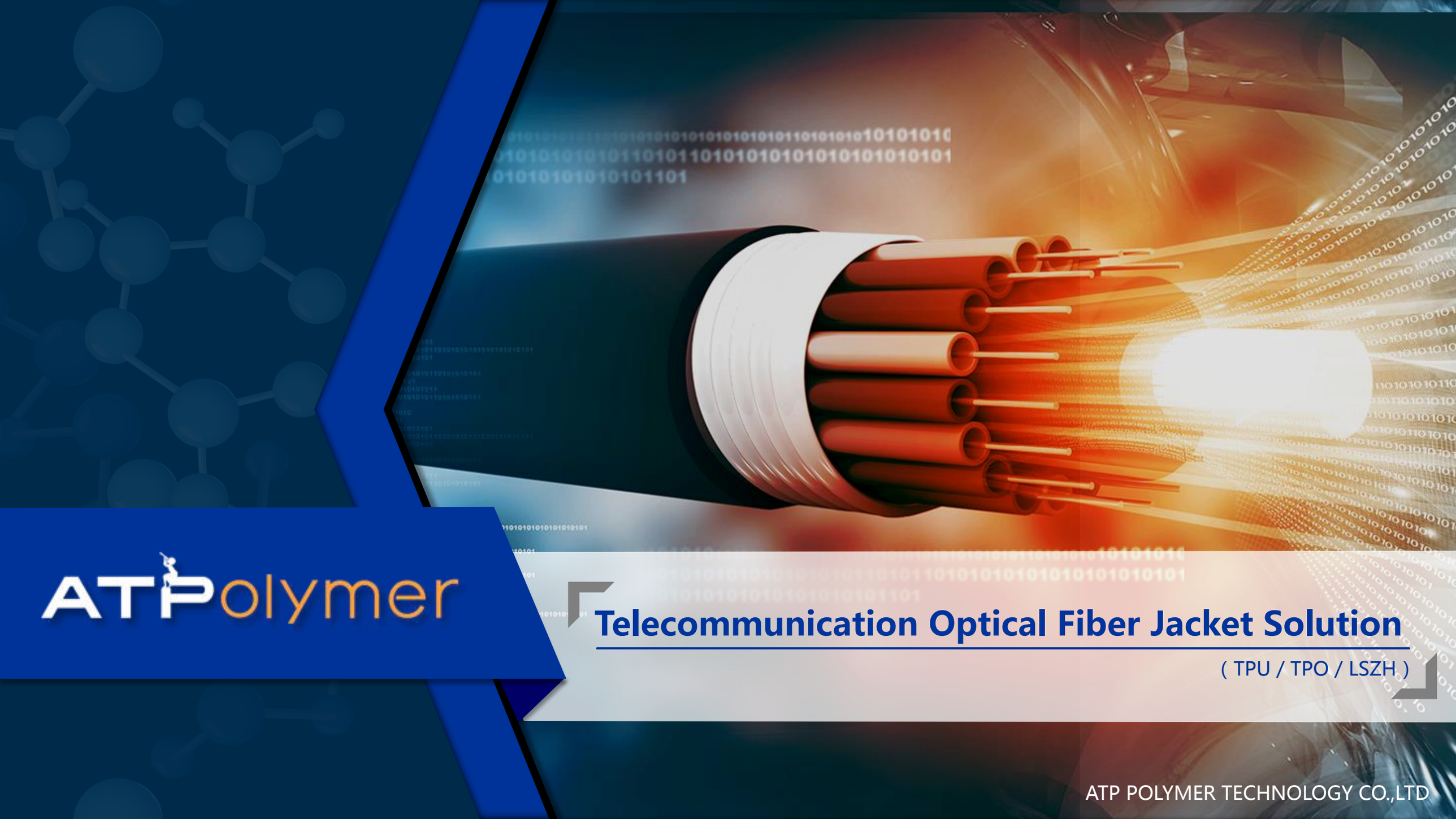


ATPolymer

Telecommunication Optical Fiber Jacket Solution

(TPU / TPO / LSZH)

ATP POLYMER TECHNOLOGY CO.,LTD

LSZH

TPU

TPE

TPO

About ATP

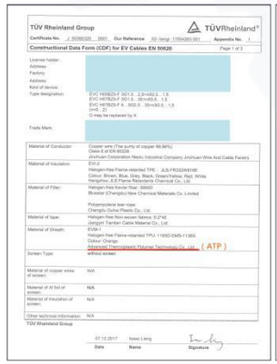
ATP Polymer Technology co., LTD. (ATP) is a national high-tech enterprise dedicated in the research, development, production and sales of new environment-friendly Polymer materials including modified thermoplastic Polymer and LSZH. It was founded in 2007 by many Polymer materials experts. The company is located in Dongcheng Science & Technology Park, Dongguan city, Guangdong province, with an annual design capacity of nearly 12,000 tons. Main products include: TPU, TPEs, LSZH, XLPE,4 series. Widely used in: new energy vehicles, medical equipment, robots, 5G communications, building wiring, rail transit, military aerospace, intelligent wear, consumer electronics and other hot areas.

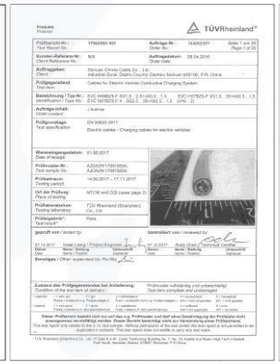
ATP not only has an expert-type research and development team composed of doctors and masters from Chinese academy of sciences, Beijing University Of Chemical Technology and other well-known research institutes (universities), but also has established a high-standard material laboratory that has been certified by CNAS (China national accreditation council for conformity assessment certification), constructed and operated in strict accordance with IEC17025 standard. The company has industry-leading material comprehensive performance analysis and testing equipment and a small number of testing equipment in south China that can fully meet the European Union CPR regulations and GB31247 cable flame retardant grade.

Relying on the strong scientific research strength, the accumulation of global application cases, the intelligent manufacturing ability and the quality control ability to fully meet the requirements of ISO9001:14001, ATP is able to quickly provide customers with cable and communication cable material solutions that fully comply with the major building directives, safety codes and environmental standards of the European Union (EN/IEC), North America (UL/CSA) and China (GBT/GJB). Up to now, ATP is not only the main partner of modified polymer materials for many world-renowned communication and cable listed companies and professional enterprises, but also the core products have obtained long-term and extensive applications in many important communication construction projects in North America, South America, Europe and so on.

Under the business philosophy of “internationalization of quality and localization of cost” and through patient listening and professional insight into customers’ demands, ATP, with its enterprising spirit and vigorous development, continuously improves the added value and cost performance of its products, and helps customers win the opportunity in the fierce market competition and achieve continuous success.

Professional, frontier, steady. ATP, your trusted polymer material partner.





CONTENTS

1 . High Weathering Jacket Material

Application Advantages

Defender-T™ TPU series (1090T series) is halogen-free flame retardant polyether TPU material that ATP developed for cable jacket, with excellent weather resistance, flame retardancy, mechanical properties and processing properties. Since the mass production in 2008, the 1090T series of products have experienced large-scale stable production for 10 years, widely used in China, Southeast Asia, North America, South America, Europe. Their safety and reliability have withstood the different global environment, the rigorous test of all-weather and long-term use. Based on this, the 1090T series has won the unique choice of many well-known optical cable companies around the world, and has become the most used modified TPU product in optical cable field.

High weathering Jacket Material -TPU

1. UL certified V0 grade polyether TPU:
UL94-V0 (1.5mm) flame retardant grade, fully support the conventional structural cable through the IEC60332-1-2 single vertical burning test;

2. High and low temperature shrinkage rate, shrinkage rate ≤1% in high and low temperature cycle test;

3. High security and reliability, support optic cable through various environmental test and life test :

>>Mold resistance:
Authoritative certified mold resistant materials: through the military standard mold resistance test (GJB150.10) ;

>>Hydrolysis resistance :
Pass 1000/2000Hrs hydrolysis resistance test (different model) (85°C/85% RH, 1000/2000 Hrs) ;

>>High and low temperature resistance: :
Wide temperature range for use, Pass 720Hrs high temperature test (125°C, 720Hrs) and low temperature destructive test such as low temperature winding (-50°C) and low temperature shock (-50 ° C) ;

>>Acid and alkali resistant, oil resistant, chemical resistant :
Pass various acid and alkali resistance, oil resistance and chemical resistance test (e.g: acid and alkali resistance: 23 ° C / 168h, intensity change rate ≤ 30%, extended rate ≥100%; oil resistance: 70 °C / 24h oil resistance test, strength and elongation, change rate ≤ 30%);

>>UV resistant: :
Pass UL1581 UV test (720Hrs UV cycle test, strength and elongation, retention rate ≥ 80%);

4. High wear resistance: :
Polar material, high cohesive energy, and wear resistance are much better than conventional low-smoke halogen-free polyolefin materials (LSZH);

5. Excellent processing performance: :
Fully meet the requirements of cable jacket filling, semi-filling, empty pipe extrusion, and high-speed ultra-thin wall (≤0.1mm, 80-200m/min)extrusion requirements. high yield rate, and low degradation performance such as runny, broken skin, granules, coarse hemp, mold marks, and stereotypes.

6. Advanced appearance: :
The even and delicate frosted surface (matte surface) not only makes the cable wear-resistant, reliable high-quality texture, but also allows the cable jacket surface to have a high friction coefficient , fully satisfying the butterfly cable (eg: 3.0mm) pulley hanging test.

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1. High Weathering Jacket Material

Properties Datasheet

					Model	Model	Model	Model
General characteristics	Material properties	Test standard	Test condition	Unit	1090T	1085TM	1588T	1632T
	Material category	-	-	-	Polyether	Polyether	Polyether	Polyether
	Appearance (light/half fog/fog)	-	-	-	Semi-matte	Frosted	Semi-matte	Semi-matte
	Extrusion/injection	-	-	-	Extrusion	Extrusion	Extrusion	Extrusion
Physical characteristics	Hardness	DIN 53505	155	Shore A	89	87	89	91
	Proportion	DIN 53479	-	g/cm³	1.22	1.17	1.23	1.25
	Melt index	DIN 53735	190℃/2.16kg	g/10min	8	2	5	8
	Brittle temperature	ISO 812	-	℃	-60	-60	-60	-60
Mechanical properties	Elongation	DIN 53504	200mm/min	%	600	650	550	550
	Tensile Strength	DIN 53504	200mm/min	Mpa	18	30	15	15
	Tearing strength	DIN 53515	500mm/min	KN/m	55	70	50	50
Hot air aging	Elongation retention rate	DIN 53504	113℃/168h	%	≥75	≥75	≥75	≥75
	Tensile strength retention	DIN 53504	113℃/168h	%	≥75	≥75	≥75	≥75
Electrical performance	Volume resistivity	ASTM D257	-	Ohm-cm	≥1.0E+11	≥1.0E+11	≥1.0E+11	≥1.0E+11
Combustion performance	Vertical burning test	UL 94	1.5/6.0mm	-	V0(1.5mm)	V0(6.0mm)	V0(1.5mm)	V0(6.0mm)
Feature					The most typical cable TPU jacket material products, suitable for high-speed processing, with smooth surface.	Passed 2000 hours hydrolysis test,Frosted surface	Excellent overall performance, better flame retardant.	Cost-effective

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2. Mold Resistant Jacket Material

Application Advantages

Defender-T ™ TPU series (1185D series) is a halogen-free flame retardant polyether TPU that ATP specially developed for optical cables aiming to high mold resistance requirements.

Mold Resistant Jacket Material – TPU

1. UL certified V0 grade polyether TPU: :
UL94-V0 (1.5mm) flame retardant grade, fully support the conventional structural cable through the IEC60332-1-2 single vertical burning test;

2. Extremely small high and low temperature shrinkage rate, shrinkage rate ≤1% in high and low temperature cycle test ;

3. High security and reliability, support fiber optic cable through various environmental test and life test :

>>Mold resistance:
Authoritative certified mold resistant materials: through the military standard mold resistance test (GJB150.10) ;

>>Hydrolysis resistance :
Pass 2000Hrs hydrolysis resistance test (different model) (85°C/85% RH, 2000 Hrs) ;

>>High and low temperature resistance: :
Wide temperature range for use, Pass 720Hrs high temperature test (125°C, 720Hrs) and low temperature destructive test such as low temperature winding (-50°C) and low temperature shock (-50 ° C) ;

>>Acid and alkali resistant, oil resistant, chemical resistant :
Pass various acid and alkali resistance, oil resistance and chemical resistance test (e.g: acid and alkali resistance: 23 ° C / 168h, intensity change rate ≤ 30%, extended rate ≥100%; oil resistance: 70 °C / 24h oil resistance test, strength and elongation, change rate ≤ 30%);

>>UV resistant:
Pass UL1581 UV test (720Hrs UV cycle test, strength and elongation, retention rate ≥ 80%);

4. High wear resistance: :
Polar material, high cohesive energy, and wear resistance are much better than conventional low-smoke halogen-free polyolefin materials (LSZH);

5. Excellent processing performance: :
Fully meet the requirements of cable jacket filling, semi-filling, empty pipe extrusion, and high-speed ultra-thin wall (≤0.1mm, 80-200m/min)extrusion requirements. high yield rate, and low degradation performance such as runny, broken skin, granules, coarse hemp, mold marks, and stereotypes.

6. Advanced appearance: :
The even and delicate frosted surface (matte surface) not only makes the cable wear-resistant, reliable high-quality texture, but also suitable for the extinction requirements of military optical cables.

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Properties Datasheet

					Model
General characteristics	Material properties	Test standard	Test condition	Unit	1185D-ENB
	Material category	-	-	-	TPU Polyether
	Appearance (light/half fog/fog)	-	-	-	Frosted
	Extrusion/injection	-	-	-	Extrusion
Physical characteristics	Hardness	DIN 53505	155	Shore A	87
	Proportion	DIN 53479	-	g/cm³	1.17
	Melt index	DIN 53735	190℃/2.16kg	g/10min	2
	Brittle temperature	ISO 812	-	℃	-60
Mechanical properties	Elongation	DIN 53504	200mm/min	%	600
	Tensile Strength	DIN 53504	200mm/min	Mpa	30
	Tearing strength	DIN 53515	500mm/min	KN/m	70
Hot air aging	Elongation retention rate	DIN 53504	113℃/168h	%	≥75
	Tensile strength retention	DIN 53504	113℃/168h	%	≥75
Electrical performance	Volume resistivity	ASTM D257	-	Ohm-cm	≥1.0E+11
Combustion performance	Vertical burning test	UL 94	1.5/6.0mm	-	V0(6.0mm)
Feature					Passing GJB 150.10A grade 0~1 mold resistance

3. Micromodule for Optical Fiber Cable

Application Advantages

Defender-SM ™ series (1185F) is a patented specialty elastomer polymer (TPUA) developed by ATP specifically for the special construction requirements of lightweight cables. It cost for three years from project development, comprehensive testing to large-scale mass production. It is one of the few fiber protection materials in the world that can fully meet the requirements of light cable processing and construction.

Micromodule for Optical Fiber Cable
– high and low temperature resistance TPUA/TPO

1. Meet construction needs:

>> Easy peeling :
The index finger and the thumb nail gently clamped to achieve the peeling of the sheath from the optical fiber, the peeling slit being neat , smooth, without burrs;

>> Easy tearing :
the fiber sheath can be torn by similar to the strength of tearing off an A4 paper, the tearing slit being neat, smooth, without burrs;

2. High security and reliability, support fiber optic cable through various environmental test and life test :

>> Hydrolysis resistance :
Pass 1000Hrs hydrolysis resistance test (different model) (85°C/85% RH, 1000 Hrs) ;

>> UV resistant:
Pass EN 50289-4-17 UV test (mercury lamp (90±10) w/m^2 , wavelength 300~400nm, 60℃, 350Hrs720Hrs) strength and elongation, retention rate ≤50%;

>> Oil-resistant soaking:
The change of the strength and elongation of the paste cable under high temperature conditions (70 ° C / 240Hrs) or light cable immersed in 5 times of grease volume (70 ° C / 240Hrs) ≤ 30%;

>> High temperature resistance :
After 80 ° C / 42 Days, the change of strength and elongation is ≤ 30%.

3.Excellent processing performance: :

>> Meet both dry and wet extrusion processing requirements; ;
>> The adhesive not adhered to the outer sheath of the ether elastomer during extrusion;
>> Excellent coloring performance, after evenly mixed with 2% of the same type of color masterbatch, it can achieve stable and uniform product coloring;
>> Fully meet the requirements of high-speed ultra-thin wall (≤0.1mm, ≥150-m/min)extrusion requirements, long- time Stable mass production, high yield rate, and low processing defect such as runny, broken skin, granules, coarse hemp, mold marks, and stereotypes.

4. High cost performance:

Breaking the international monopoly, the cost is reduced by more than 40% compared to the same type of material abroad.

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Properties Datasheet

					Model	Model
General characteristics	Material properties	Test standard	Test condition	Unit	1185F-EM	2895F-ES
	Material category	-	-	-	Ether Elastomer	TPO
	Appearance (light/half fog/fog)	-	-	-	Semi-matte	Semi-matte
	Extrusion/injection	-	-	-	Extrusion	Extrusion
Physical characteristics	Hardness	DIN 53505	155	Shore A	88	95
	Proportion	DIN 53479	-	g/cm³	1.13	1.38
	Melt index	DIN 53735	230℃/5kg	g/10min	1	1
	Brittle temperature	ISO 812	-	℃	-55	-40
Mechanical properties	Elongation	DIN 53504	200mm/min	%	230	200
	Tensile Strength	DIN 53504	200mm/min	Mpa	8	12
	Tearing strength	DIN 53515	500mm/min	KN/m	28	15
Electrical performance	Volume resistivity	ASTM D257	-	Ohm-cm	≥1.0E+11	≥1.0E+15
Feature					micromodule for optical fiber cable	micromodule for optical fiber cable

4. Conventional Jacket Material

Conventional Jacket Material - LSZH

1.High cost-performance: :
After long-term repeated optimization of raw material selection, formulation design, unique patented lubrication technology, and the introduction of high-flowing elastomeric polymer to participate in blending modification, the material has better mass production reliability and good product rateat the same price ; material performance fully meets low-smoke halogen-free material standard requirements for YD/T1113, GB/T 32129 cable and electric cable ;

2. Excellent flame retardant :
Fully support the conventional structural optic cable through IEC60332-1-2 (single vertical), YD/T1113, GB/T32129 and other optical cable performance test requirements;

3. Safety and reliability :
Fully support the cable through high and low temperature aging, UV aging and high temperature cracking test;

4. Good Wear Resistance :
Better wear and scratch resistance under the same test conditions;

5. Easier processing :
Fully meet the high-speed extrusion requirements of optical cable, the wire diameter round and stable, less flow (less die deposit), good color stability , higher yield rate ;

6. Stable performance and quality :
The product batch stability and uniformity are guaranteed.

Application Advantages

LSZH is a kind of cable sheathing material that has been widely used in the world. The urgent need of cable manufacturers is to provide better scale processing and better prices while meeting the basic safety performance, flame retardant performance, mechanical strength and reliability. ATP's Defender-NTM product is a cost-effective LSZH material developed for this customer's needs.

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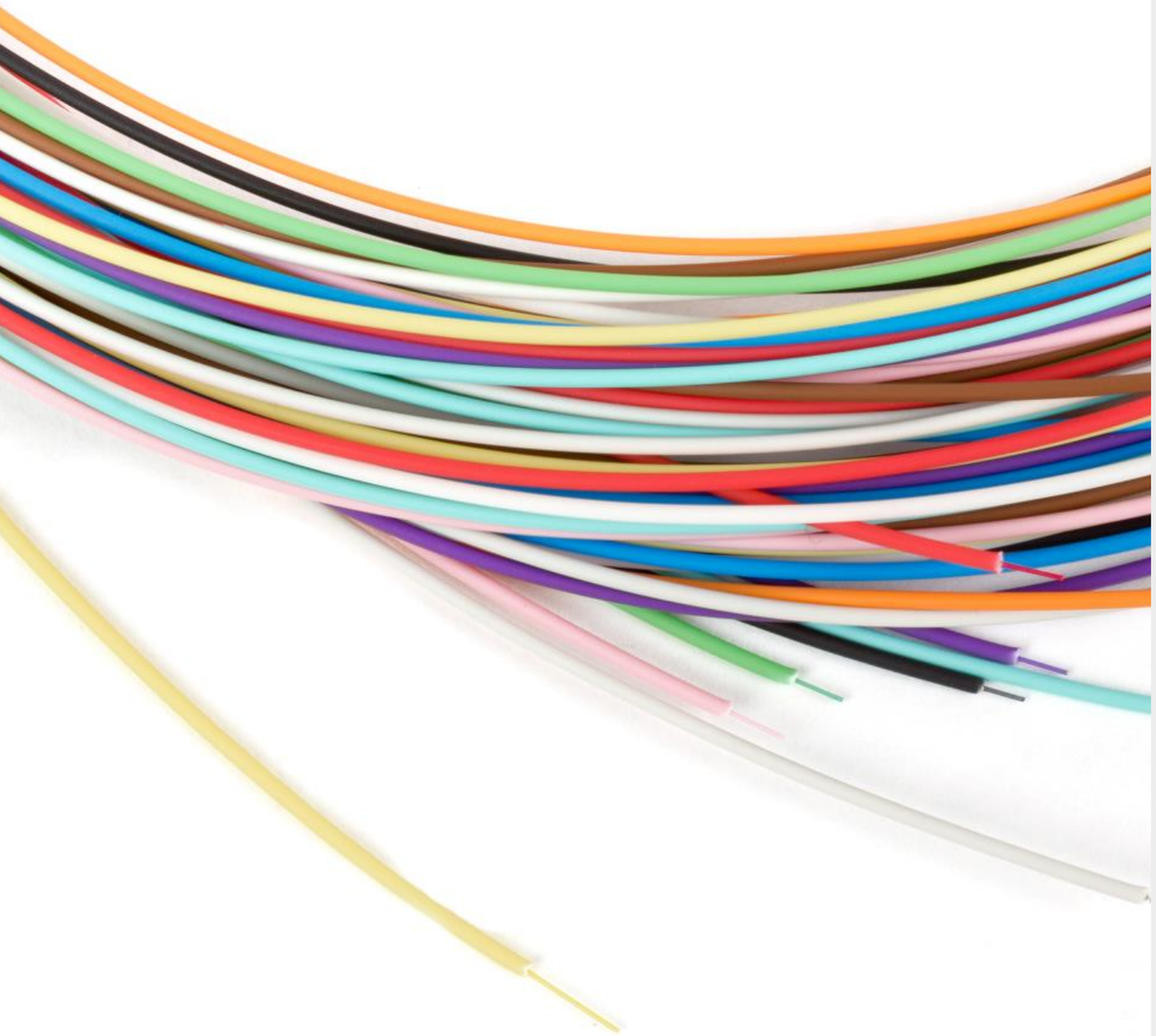
Properties Datasheet

					Model	Model
Item	Material properties	Test standard	Test condition	Unit	5662G	5631E
Physical characteristics	Hardness	DIN 53505	155	Shore A	95	92
	Proportion	DIN 53479	-	g/cm³	1.49	1.50
	Brittle temperature	ISO 812	-	℃	-20	-20
mechanical properties	Elongation	DIN 53504	200mm/min	%	190	170
	Tensile Strength	DIN 53504	200mm/min	Mpa	11.5	11
Hot air aging	Heat aging condition	DIN 53504	158℃/168h	%	110×240	110×168
	Tensile Strength/ Break Elongation	DIN 53504	158℃/168h	%	103/90	100/90
Electrical performance	Volume resistivity	ASTM D257	-	Ω·m	1.1×10^{12}	2.3×10^{12}
	Dielectric strength	ASTM D149	-	MV/m	23	23
Combustion performance	Oxygen index	ASTM D2863	-	%	30	31
Feature					Conventional sheathing materials such as butterfly cable meet high-speed extrusion, stable quality and low flow.	The conventional sheath materials such as leather cable meet high-speed extrusion, stable wire diameter, less flow and good product batch stability.

5. High Hardness Tight Packing Material



Application Advantages

High Hardness Tight Packing Material- LSZH

1. High hardness :

Hardness ≥58D, more suitable for tight/sleeve characteristics;

2. Good liquidity :

Fully meet the fiber tight/sleeve thin wall high speed (≥150m/min), long-term stable processing requirements, the wire diameter being round and stable;

3. Less flow :

The unique patented lubrication technology makes the material have few processing defects such as flow, broken skin, broken wire and particles during the high-speed extrusion.

Properties Datasheet

Item	Material properties	Test standard	Test condition	Unit	Model 5162G	Model 5262S
Physical characteristics	Hardness	DIN 53505	155	Shore A	98	95
	Proportion	DIN 53479	-	g/cm³	1.478	1.480
	Brittle temperature	ISO 812	-	℃	-20	-20
	Melt index	DIN 53735	230℃/5kg	g/10min	0.9	
Mechanical properties	Elongation	DIN 53504	200mm/min	%	220	190
	Tensile Strength	DIN 53504	200mm/min	Mpa	20	12.5
Hot air aging	Heat aging condition	DIN 53504	158℃/168h	%	110×240	110×240
	Tensile Strength/ Break Elongation	DIN 53504	158℃/168h	%	105/86	110/82
Electrical performance	Volume resistivity	ASTM D257	-	Ω·m	2.1×10^{12}	2.3×10^{12}
	Dielectric strength	ASTM D149	-	MV/m	23	24
Combustion performance	Oxygen index	ASTM D2863	-	%	33	34
Feature					Flame-retardant tight sheathing material for the indoor soft cable meets high-speed extrusion, stable performance and quality, less runny.	Flame-retardant tight sheathing material for the indoor soft cable meets high-speed extrusion, stable performance and quality, less runny.

6. CPR Jacket Material

CPR Jacket Material – LSZH

1. High flame retardant pperformance :

>> Fully support the optical cable through the EN 50575:2014+A1:2016 B2ca, Cca, Dca level test (different product models meet different CPR level requirements);

>> Very effective total heat release and heat release rate peak control scheme. The carbonization efficiency is higher. When burning, the cable surface can be quickly charred to form an effective fiber protective layer; the generation of smoke during combustion and the release of halogen acid gas are also in full compliance with the CPR regulations;

2. Safety and reliability :

Fully support the cable through environmental resistance test as follows;

>> Passed high temperature cracking test (YD/T1113 100 ° C, 96H, no crackle on surface);

>> Pass the high temperature aging test (100 ° C, 168H, tensile strength and elongation change rate ≤ 30%);

>> Pass the -25 ° C low temperature shock test.

3. Good wear resistance:

Better wear and scratch resistance under same test conditions;

4. easier processing :

Fully meet the high-speed extrusion of optical cables; the wire diameter is round and stable, less flow (less die deposit), good color stability , higher processing yieldrate.

5. Stable performance and quality :

The product batch stability and uniformity are guaranteed. 。

Application Advantages

The new generation of CPRsupport™ LSZH series are high flame retardant LSZH product developed by ATP for fiber optic cables, cables and network cables, meeting the latest EU CPR building codes and GB31247 requirements. Compared to traditional LSZH products, CPRsupportTM has undergone more long-term research and development, more complete and rigorous comprehensive performance testing. It is a new upgraded version of the traditional LSZH material, fully improved in the selection of raw materials, flame retardant system innovation, lubrication system innovation and production process control.

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Properties Datasheet

					Model	Model	Model
Item	Material properties	Test standard	Test condition	unit	5635S	5644S	5653S
Physical characteristics	Hardness	DIN 53505	155	Shore A	93	97	97
	Proportion	DIN 53479	-	g/cm³	1.55	1.52	1.49
	Brittle temperature	ISO 812	-	℃	-20	-20	-20
Mechanical properties	Elongation	DIN 53504	200mm/min	%	150	150	180
	Tensile Strength	DIN 53504	200mm/min	Mpa	12.5	10	12.5
Hot air aging	Heat aging condition	DIN 53504	158℃/168h	%	100×240	110×240	110×240
	Tensile Strength/ Break Elongation	DIN 53504	158℃/168h	%	105/86	115/88	112/85
Electrical performance	Volume resistivity	ASTM D257	-	Ω·m	6.1×10^{12}	2.5×10^{12}	3.8×10^{12}
	Dielectric strength	ASTM D149	-	MV/m	24	24	24
Combustion performance	Oxygen index	ASTM D2863	-	%	46	41	37
Feature					High flame retardant LSZH cable sheathing material, passed CPR-B2ca and GB 31247 B1 flame retardant grading test.	High flame retardant sheathing material, meeting CPR-Cca and GB 31247 B2 flame retardant grading test.	Flame-retardant jacket material meets CPR-Dca flame retardant grading test.

7. Low Friction Jacket Material

Application Advantages

Low Friction Jacket Material - LSZH

Low friction coefficient LSZH jacket material, easy for on-site construction of fiber optic cable.

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Properties Datasheet

					Model
Item	Material properties	Test standard	Test condition	Unit	5663D
Physical characteristics	Hardness	DIN 53505	155	Shore A	93
	Proportion	DIN 53479	-	g/cm³	1.43
	Brittle temperature	ISO 812	-	℃	-20
Mechanical properties	Elongation	DIN 53504	200mm/min	%	230
	Tensile Strength	DIN 53504	200mm/min	Mpa	15
Hot air aging	Heat aging condition	DIN 53504	158℃/168h	%	110×240
	Tensile Strength/ Break Elongation	DIN 53504	158℃/168h	%	103/90
Electrical performance	Volume resistivity	ASTM D257	-	Ω·m	1.1×10^{13}
	Dielectric strength	ASTM D149	-	MV/m	23
Combustion performance	Oxygen index	ASTM D2863	-	%	33
Feature					low friction coefficient common jacket materials for the butterfly fiber optic cable etc, convenient for on-site construction.

8. High Hardness Jacket Material

Application Advantages

High Hardness Jacket Material – LSZH

1. High hardness :

High-hardness LSZH material (hardness ≥65D), improves the pressure resistance of the cable, and ensures the optical signal attenuation to reach the standard requirements under high pressure load;

2. Good flame retardant :

Support optical fiber cable to pass IEC60331-1-2 single vertical burning test;

3. High temperature resistance:

Support working temperature: -40 ~ 125 °C.

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Properties Datasheet

					Model
Item	Material properties	Test standard	Test condition	Unit	5671H
Physical characteristics	Hardness	DIN 53505	155	Shore A	98
	Proportion	DIN 53479	-	g/cm³	1.34
	Brittle temperature	ISO 812	-	℃	-20
Mechanical properties	Elongation	DIN 53504	200mm/min	%	280
	Tensile Strength	DIN 53504	200mm/min	Mpa	13.5
Hot air aging	Heat aging condition	DIN 53504	158℃/168h	%	155×240
	Tensile Strength/ Break Elongation	DIN 53504	158℃/168h	%	91/88
Electrical performance	Volume resistivity	ASTM D257	-	Ω·m	1.8×10^{12}
	Dielectric strength	ASTM D149	-	MV/m	25
Combustion performance	Oxygen index	ASTM D2863	-	%	30
Feature					High hardness, low smoke, halogen free fuel (hardness ≥ 65D or > 98A)

9. High and Low Temperature Shrinkage Jacket Material

High and Low Temperature Shrinkage Jacket Material – LSZH

1. Flame retardant :

>> Fully support optical fiber cable to pass IEC60331-1-2 single vertical burning test ;

2. Excellent high and low temperature resistance shrinkage :

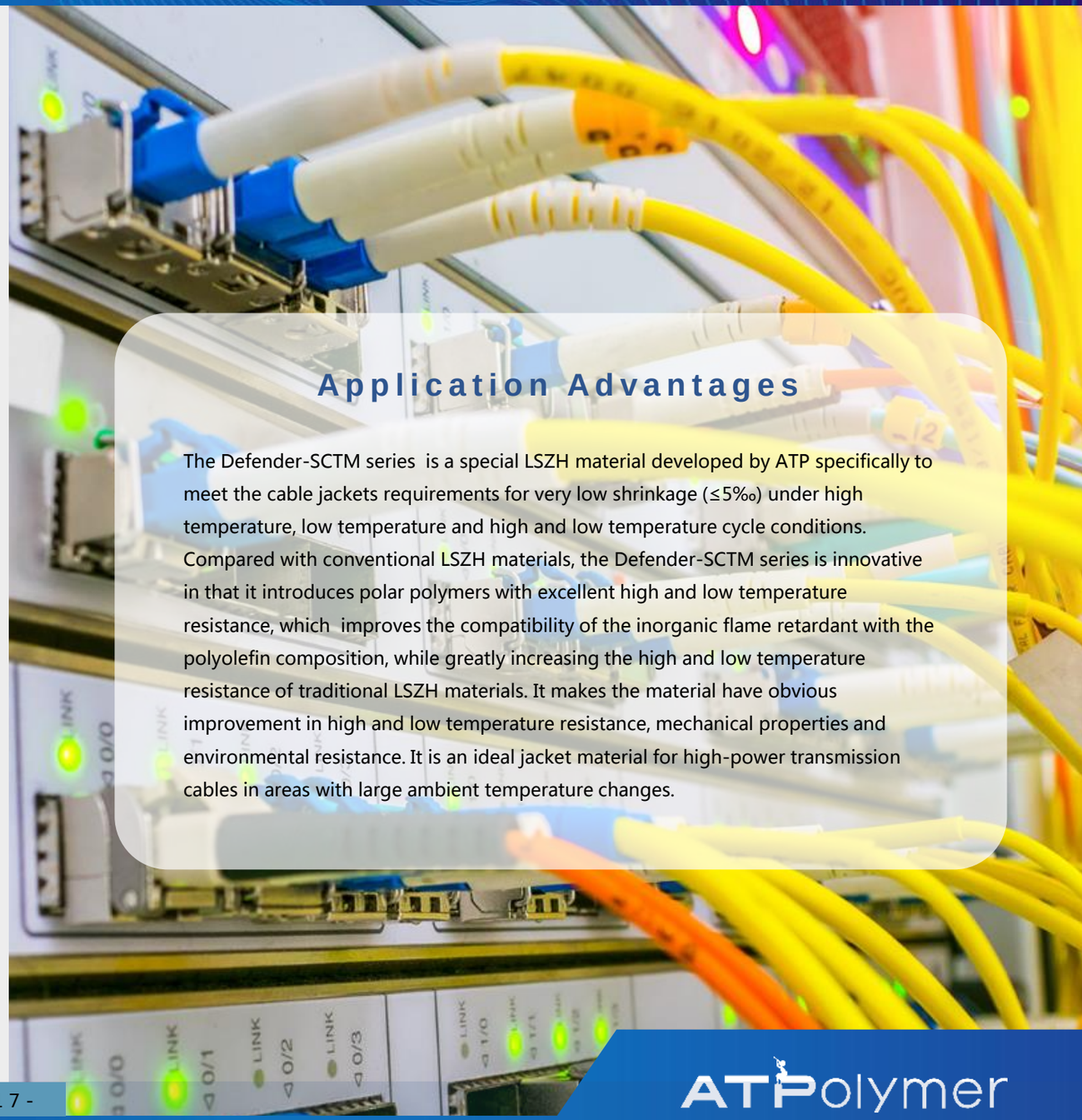
>> High temperature shrinkage: 4 hours treatment at 85 ° C cycle, if cooled to room temperature, shrinkage ≤ 3 ‰,

>> Low temperature shrinkage: 40 °C for 4 hours, shrinkage at low temperature ≤ 3‰;

>> High and low temperature cycle shrinkage: maintained at 85 ° C for 4 hours, and then reduced to -40 ° C for 4 hours, after two cycles, the maximum shrinkage at -40 ° C ≤ 5 ‰;

3. Better processing :

Fully meet the optical cable high-speed extrusion (≥150m/min) , the wire diameter round and stable, less flow (less die deposit), good color stability, higher yield rate. The product batch stability and uniformity are guaranteed.



Application Advantages

The Defender-SCTM series is a special LSZH material developed by ATP specifically to meet the cable jackets requirements for very low shrinkage (≤5‰) under high temperature, low temperature and high and low temperature cycle conditions. Compared with conventional LSZH materials, the Defender-SCTM series is innovative in that it introduces polar polymers with excellent high and low temperature resistance, which improves the compatibility of the inorganic flame retardant with the polyolefin composition, while greatly increasing the high and low temperature resistance of traditional LSZH materials. It makes the material have obvious improvement in high and low temperature resistance, mechanical properties and environmental resistance. It is an ideal jacket material for high-power transmission cables in areas with large ambient temperature changes.

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Properties Datasheet

					Model
Item	Material properties	Test standard	Test condition	Unit	5661L
Physical characteristics	Hardness	DIN 53505	155	Shore A	65
	Proportion	DIN 53479	-	g/cm³	1.41
	Brittle temperature	ISO 812	-	℃	-20
Mechanical properties	Elongation	DIN 53504	200mm/min	%	200
	Tensile Strength	DIN 53504	200mm/min	Mpa	18
Hot air aging	Heat aging condition	DIN 53504	158℃/168h	%	155/175×240
	Tensile Strength/ Break Elongation	DIN 53504	158℃/168h	%	93/90
Electrical performance	Volume resistivity	ASTM D257	-	Ω·m	7.8×10^{11}
	Dielectric strength	ASTM D149	-	MV/m	24
Combustion performance	Oxygen index	ASTM D2863	-	%	31
Feature					High and low temperature resistance shrinkage , shrinkage ≤5‰ (hardness ≥65D or >98A) at high and low temperature cycle of -40～85°C.

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