

# PO TPXCJ1



## 产品简介

PO Composite material

良好的电性能 Good electrical performance

良好的物理性能 Good physical properties

优异的加工性能及阻燃性 Excellent processing properties and flame retardancy

**Introduction:** PO TPXCJ1 is a thermoplastic halogen-free optical fiber material which is processed by mixing, kneading and granulating with polyolefin resin and inorganic environmental protection flame retardant and other additives. This material has good physical properties and flame retardant properties. Processing and forming properties.

**Main use:** Cable sheath

**Performance:**

性能 Properties	测试标准 Test Method	测试条件 Test Condition	单位 Units	典型值 Typical Values
<b>物理性能 Physical</b>				
密度 Specific Gravity	ASTM D-792	23℃	g/cm <sup>3</sup>	1.53
灰份 Ash	-	800℃,30min	%	-
<b>机械性能 Mechanical</b>				
拉伸强度 Tensile Strength	IEC 60811-1-1		MPa	14.5
邵氏硬度 Shore hardness D	ASTM D 2240		--	60
断裂伸长率 Elongation at Break	IEC 60811-1-1		%	120
<b>热性能 Thermal</b>				
高温压力 High temperature pressure (80℃×4h)	IEC 60811-3-1		%	20
-25℃低温冲击脆化温度 Low temperature impact embrittlement temperature	IEC60811-1-4		℃	-25
<b>其他 Others</b>				
介电强度 Dielectric strength	IEC60243	23℃	kV/mm	33
体积电阻率(20℃)Volume resistivity (20℃)	IEC60093		Ω.m	2.3×10 <sup>13</sup>
浸水体积电阻率 Water immersion volume resistivity (70℃×168h)	IEC60093		Ω.m	2.0×10 <sup>12</sup>
热收缩 Heat shrinkage (100℃×1h)	IEC 60811-1-3		%	1.0
氧指数 Oxygen Index	ASTM D2863		%	3
烟密度 Smoke density	有焰 Flame	ASTM E-662	--	55
	无焰 Flameless		--	200
卤酸气体含量 Halogen acid content	IEC 60754-1		mg/g	0
PH	IEC 60754-2		--	>5.1
电导率 Conductivity		μS/mm	2	
毒性指数 Toxicity index	NES 713-1985		--	1
阻燃等级 Flammability rating	IEC60332-3		--	---

**Recommended extrusion process parameters:**

眼 模	机 头	机 颈	三 段	二 段	入 料
Eye mode	Machine head	Machine neck	Three sections	Two sections	Incoming section
150℃	145℃	140℃	135℃	125℃	110℃

This product is packaged in a waterproof and moisture-proof aluminum foil bag. It can be directly used for extrusion production without drying the material before production.

**Packing/storage:** 25kg/bag; transported as normal chemicals, stored in a dry and cool place, avoid direct sunlight.

**Remarks:** The physical technical indicators and data provided in this document are for reference only and cannot be used as inspection and guarantee. Users are also responsible for conducting experiments on the products purchased by our company to verify that they are suitable for the proposed process, use, performance and standards. Because the application and processing of our products are not controlled by our company, the user is responsible for the reasons.

**Attachment:** Precautions for the wire extrusion process and solutions to common problems:

**1. Extrusion machine selection**

The length-to-diameter ratio (L/D) of the PO TPXCJ1 product extrusion machine is between 18:1 and 25:1; the compression ratio is between 1.1 and 2.5.

**2. There are hairs or bubbles on the surface of the wire. After cutting, there is a hole in the extruded layer.**

The main reasons are:

- (1) wet material;
- (2) the temperature setting is too high or the temperature control is not good;
- (3) The compression ratio of the screw is too large ,and the internal shear heat is too much.

Suggested measures: If the material is placed for too long, pre-drying should be done before use and dry for 2 to 4 hours at 80 °C . The processing temperature is reasonably set during the extrusion process to reduce the temperature of the fuselage and mold. Strengthen and check whether the heating and cooling system is working properly; reduce the screw speed, and even replace the low compression ratio screw.

**3. When plasticizing is poor, the surface of the wire is hairy, dull, and even suede-like. The extruded layer has obvious seams at the glue.**

The main reasons are:

- (1) The temperature setting value is low, especially the die part;
- (2) The operation method is improper, the screw and traction speed are too fast, and the plastic does not completely reach plasticization;
- (3) Uneven material mixing during granulation or quality problems in the material itself;

Recommended actions: Increase the temperature of the fuselage and die; reduce the screw speed and traction speed; replace the material.

**4. Defective steel wire surface**

The main reasons for this are:

- (1) The temperature setting value is low, the rubber is squeezed out from the nose ,and is not completely plasticized.

- (2) Some impurities are introduced into the hopper during the feeding, causing impurities;
- (3) The setting temperature is too high, the temperature control is not good, the heating or the downtime is too long, causing scorch and causing burnt sputum;

The quality of the crucible material is poor, and there are resins that are difficult to plasticize. These are not completely plasticized and are extruded.

Suggested measures: Appropriately increase the extrusion temperature or reduce the speed of screw and traction; strictly check the plastic for any impurities when feeding, and prevent mixing with other materials; set the processing temperature reasonably, clean the extrusion system regularly, select the appropriate machine, reasonable matching, to prevent burnt coke; replace raw materials.

#### **5. The discharge is slow, the motor current is too high, and the extruder body has the friction of the screw and the cylinder.**

The main reasons are:

- (1) The viscosity of the crucible material is too large;
- (2) The temperature in the feed zone is too high;
- (3) The screw compression ratio is too large ( $>2.8$ ).

Suggested measures: Increase the diameter of the stencil during processing, select the mesh with small mesh, or even filter (material cleaning); reduce the temperature of the feed section, and increase the temperature of the compression section and the homogenization section to ensure plasticization; low compression ratio 1.1 to 2.5:1 screw used.

#### **6. Extrusion outer diameter fluctuation**

The main reasons are:

- (1) The extrusion of the crucible extruder is unstable;
- (2) unstable traction ;
- (3) cable core Outer diameter fluctuations;

Suggested measures: reduce the temperature in the feed zone of the extruder, so that the material can obtain sufficient and stable thrust in the barrel; adjust the traction equipment to make it run smoothly; control the outer diameter of the semi-product of the previous process.

#### **7. The surface of the wire is yin and yang**

- (1) The ochre powder is not evenly mixed;
- (2) The temperature of the head and neck is too high;
- (3) The temperature of the head and eye is uneven.

Suggested measures: Stir the toner evenly; properly reduce the neck temperature of the head; check whether the head heating device and the eye mold are damaged.