Dongguan HONGDIAN Technology Co.,Ltd

ITO Conductive Film Introduction

ITO conductive film is a kind of Indium Tin Oxide film with conductive function. The substrate is PET. It is made by forming Indium Tin Oxide with rare metal Indium as the main raw material on PET film.

As an n-type semiconductor material, ITO conductive film has high self-carrier concentration (low resistivity), band-gap width and high light transmittance in the visible spectral region，Based on the good transmittance and conductivity, ITO conductive film is widely used in many fields such as flat panel display devices and solar cells.

The characteristics of ITO conductive film include:

1）Good electrical conductivity, resistivity up to 10-4Ω· cm；

2）Visible light transmittance is high, up to 85%；

3）It is absorptive to ultraviolet ray, and the absorption rate is above 85%;

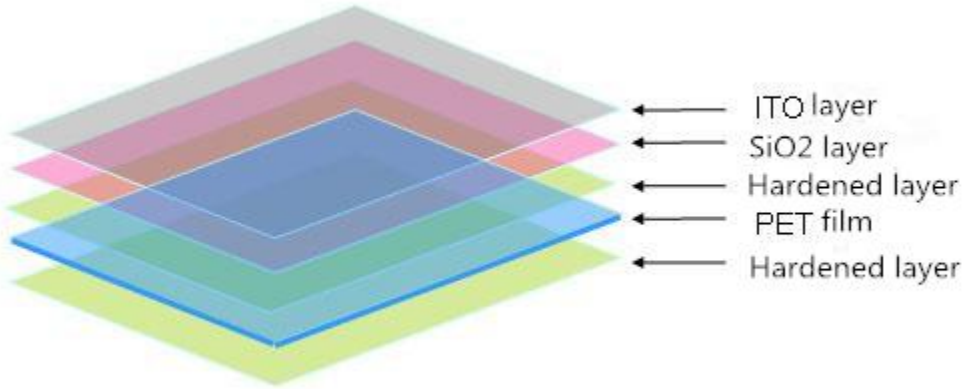
4）The reflectivity of infrared ray is above 80%;

5）It has attenuation to microwave, and the attenuation rate can reach 85%;

6）The thin layer has high hardness, it has wear resistance and chemical corrosion resistance;

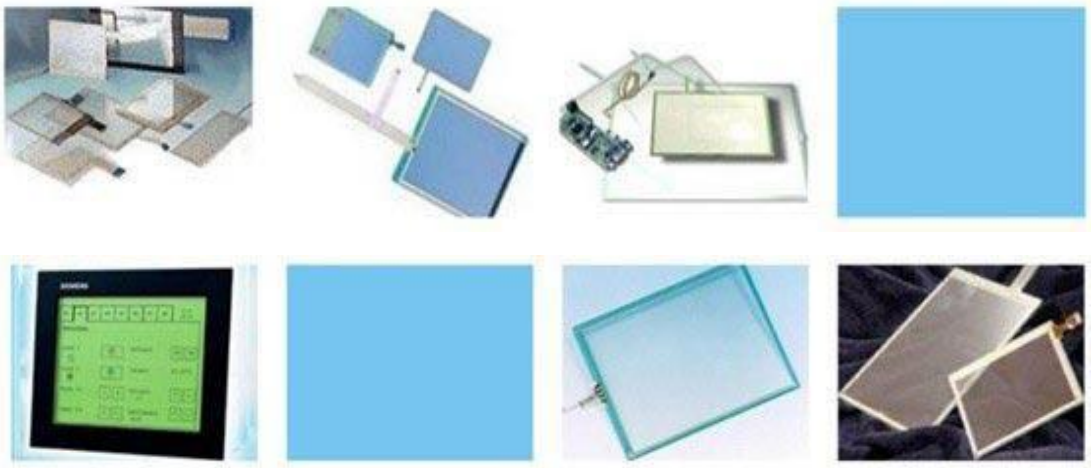
7）The film has good machining performance and is easy to etch. The combination of high visible light transmittance and relatively low resistivity makes ITO conductive film one of the transparent conductive materials with the best comprehensive performance.

Structure



Features

The product has the characteristics of high light transmittance, low rainbow pattern, anti-newton ring, high definition, high surface hardness, stable thermal performance and excellent wear resistance, and no apparent defects such as crystal point and scratch that affect the use.



Parameters

Item			Unit	Testing measure/equip ment	Spec
Base	Thickness		μm	Micrometer	190±10%
Optical	Haze		%	JIS-K-7105	8±2.0
	All-light transmittance		%	JIS-K-7105	≥82
Electrical [1]	sheet resistance		Ω/□	Four-probe resistor	350-500
	sheet resistance homogeneit	MD	%	$\frac{Max-Min}{2*Average}*100\%$	≤±6.0
		TD	%		≤±8.0
	sheet resistance rate		%	$\frac{R_1-R_0}{R_0}*100\%$	-5% ~ -15%
Physical	Film adhesion		-	JIS-K5400 8.5	100/100
	Hardness（Non-Coating Surface）		H	JIS-K5600 5.4	≥2
	Contraction	MD	%	JIS K7133 150℃,30 mins	≤1.0
		TD	%		≤0.8
	Heating curly		mm	150℃,30 mins	≤10
Chemical Resistance[2]	Ethyl alcohol		%	Dipping 10 mins $\frac{R_1-R_0}{R_0}*100\%$	-20% ~ +20%
	Acetone		%		-20% ~ +20%
	Methylbenzene		%		-20% ~ +20%

[1] Electrical: The sheet resistance and the uniformity of the sheet resistance refer to the resistance value (R1) after 60 minutes baking at 150℃, while the resistance value (R_0) before baking is only used for reference.

[2] Chemical Resistance: R_0=sheet resistance value before test R_1=sheet resistance value after test

Product Spec&Weight：

Item	Unit	Spec	Inspect tool
Length	m	+5/-0	Automatic machine measurement
Width	mm	406±2	Ruler
Thickness	um	200±10 %	Micrometer

Width: It can be cut into any width below 1200mm according to customer's requirement
Length: Available in various sizes from 50m to 200m.
Net Wight：0.27Kg/m²

Appearance Standard：

Item	Appearance Testing Standard	
punctual flaws（Black, white, bright, convex, concave, etc）	D[3]≤0.2mm	Pass
	0.2＜D≤0.4mm ≤3 处/片[4]	Pass
	D＞0.4mm	Pass
Scratch	W≤0.05mm	Pass
	0.05mm＜W≤0.1mm & L≤2mm ≤5 sides/pcs	Pass
	0.05mm＜W≤0.1mm & 2mm＜L≤5mm ≤2 sides/pcs	Pass
	0.05mm＜W≤0.1mm & L＞5mm	Pass
	W＞0.1mm	Pass
Fracture or Crack	no fracture or crack in the middle part	
Damaging Side	Edge breakage is not allowed to exceed 5mm	

[3] Punctual Flaws Size D=(L+W)/2
[4] Sample Size: 355mm x 406mm

Product Pictures