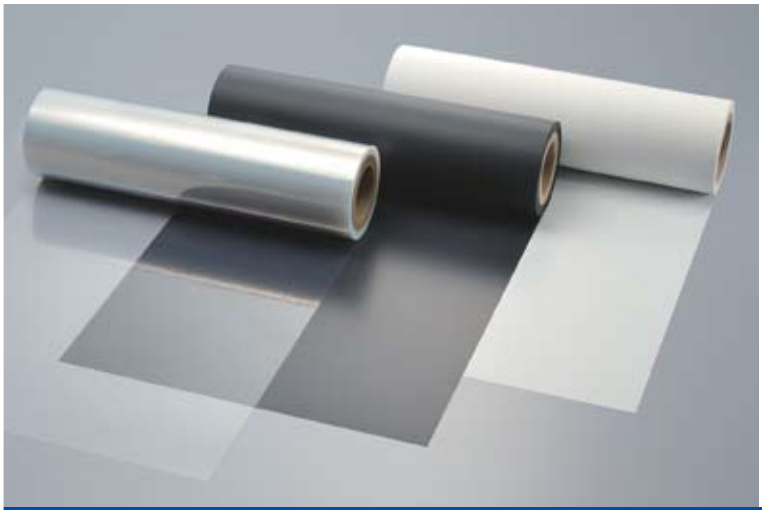
Fluon® ETFE FILM

The performance of Fluon® ETFE film is highly valued by the photovoltaics market for long term durability of solar cell modules. This high performance film provides excellent weatherability, heat resistance, chemical resistance, anti-sticking properties along with great mechanical properties. Its flexibility makes it ideal for use on curved surfaces and flex module applications. When used as a top sheet, this film offers excellent light transmittance at both low and high wavelengths. White and black colored Fluon® ETFE film is ideal for use as a back sheet due to its long term UV durability and extended service life. Fluon® ETFE films are available in either glossy or matt surface finishes. Surface treatments are available to improve film bond strength for laminations.

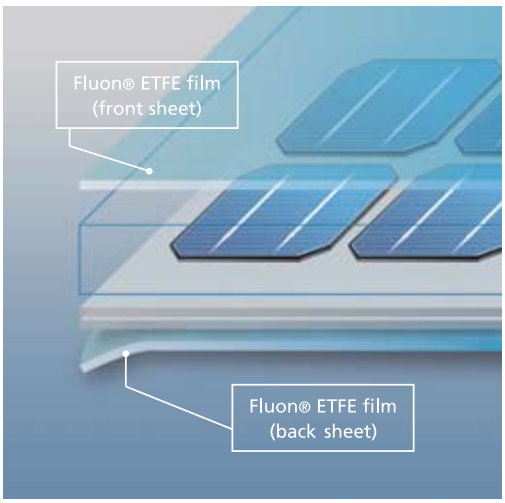
PRODUCT DESCRIPTION

Applications	Fluoropolymer film for front and back sheets of PV modules
用途	光伏组件的面板/背板用的氟树脂薄膜

Fluon® ETFE 薄膜具有优良的机械性能，以及杰出的耐候性、耐热性、耐化学药品性、防粘性，这些性能在长寿命的光伏组件中得到了高度的评价。
Fluon® ETFE 薄膜的透明薄膜对大部分波长的光线都具有高光线透过率，其柔软性最适合用于柔性光伏电池的面板。Fluon® ETFE 薄膜的白色和黑色薄膜具有超高的耐紫外性，是背板的理想材料。Fluon® ETFE 薄膜还拥有全透明、亚光以及各种表面处理的品级以满足不同应用需求。



Fluon® ETFE film for PV



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Durability Test of 100N for front sheet

		Before test	After 5000 hrs exposure test
Light transmittance	%	93	93
Tensile strength	MPa	60	60
Tensile elongation	%	395	390

Accelerated weather test with Sunshine wether-o meter

Accelerated Exposure Test of 25PWA for back sheet

Retention of Mechanical Properties

Exposure time	0 hrs	Retention rate after 500 hrs	Retention rate after 1000 hrs
Tensile Elongation	300~400 %	95~100 %	95~100 %
Tensile strength	55~65 MPa	90~95 %	85~95 %

Change in Optical Properties

Exposure time	単位	0 hrs	500 hrs	1000 hrs
Transparency at 360 nm	%	≦0.1	≦0.1	≦0.1
Visible light transmission	%	24~26	23~26	22~25
Solar transmittance	%	36~37	36~37	35~36
Solar reflectance	%	60~62	61~63	61~63
Color difference ΔE*		-	-	< 0.7

Test condition of accelerated exposure

Metal halide lamp, 1000W/㎡ (300~400nm), 63℃ (Black panel temperature)
Cycle condition:
10 hours Light irradiation (50% R.H.)
10 seconds Shower
2 hours Blackness/Condensation (30℃, 100 % R.H.)
10 seconds Shower
"EYE Super UV Tester" made by Iwasaki Electric Co., Ltd.