

# High peel strength of SEPTON™ BIO-series to prism sheet

Elastomer R&D department  
Elastomer division

***kuraray*** **Septon™** BIO-series

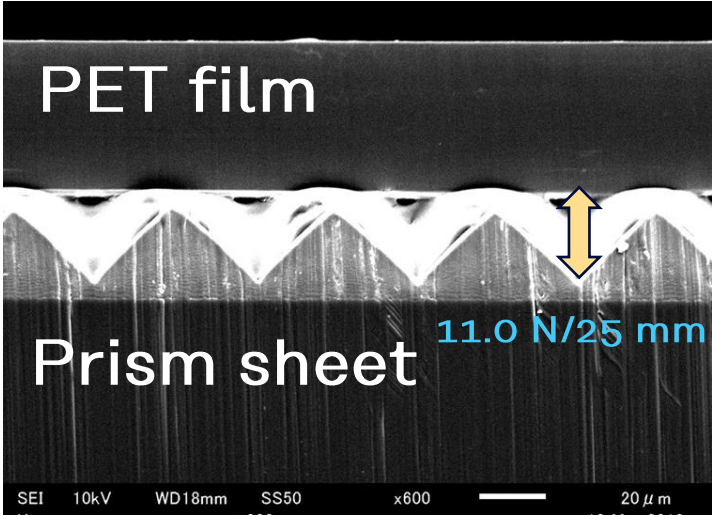
# Peel strength to prism sheet

We recommend (1) Solvent coating film of SEPTON™ BIO-series SF902

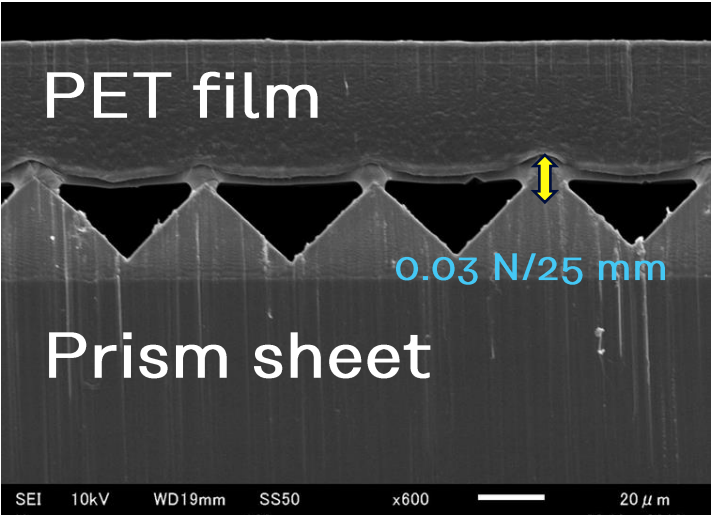
		Thickness (μm)	180° Peel strength to prism sheet (N/25 mm)
Solvent coating film	(1) SEPTON™ BIO-series SF902 (TS=25wt%)	30	11.0
	(2) SEPTON™ BIO-series SF902 (TS=12.5wt%)	20	1.1
	(3) SEPTON™ BIO-series SF904 (TS=25wt%)	30	0.02
	(4) HSBC/Tackifier [80/20] (TS=25wt%)	30	0.02
	(5) Commercial products	10	0.03
Co-extrusion film	(6) SEPTON™ BIO-series SF904	30	0
	(7) HSBC/Tackifier [80/20]	30	0

# SEM observation

Flexible SF902 is adhesive led to higher peel strength than commercial protective film.  
No adhesive residue after peeling of the adhesive of SF902.

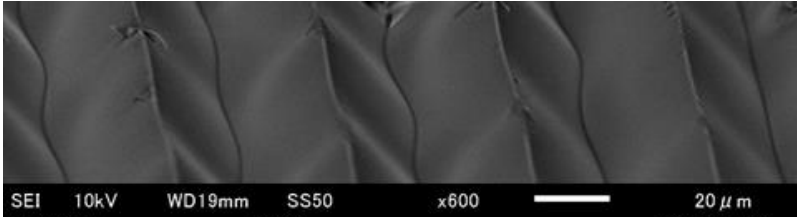


Adhesive layer



(1) SF902 (TS=25 wt%)

(5) Commercial products



(1) SF902 (TS=25 wt%) Prism sheet after peeling

# Conditions

## Solvent coating

Solvent : Cyclohexane  
TS : 25 wt%  
Baker film applicator: 6 mil  
Coating speed : 50 mm/sec  
Drying condition: 60 deg. C x 30 min → 23 deg. C x 22 h  
Thickness of adhesive layer: 20 μm (after drying)

## Measuring method

### Lamination

Roller speed: 10 mm/sec  
Load : 2 kgf  
Substrate : Prism sheet (Prism surface)

## Measurement of peel strength

Cross head speed: 300 mm/min  
Sample width : 25 mm

## Co-extrusion film

	Base material layer	Adhesive layer
Extruder	GM30-28 (GM engineering Co., Ltd.)	GM25-25 (GM engineering Co., Ltd.)
Screw	Single	Single
L/D	28(φ30)	25(φ25)
Feed block	Selector plug	
T-die	T300 (Coat hanger type)	
Temp. (deg. C)	190	190
Thickness (μm)	32	8

Base material: Block-PP (MFR=7.5 g/10 min)

# Recommended layer structure for protective film with high bio-based content

~Co-extrusion molding~

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## Recommended layer structure Co-extrusion molding

Base material layer	Bio-HDPE	μm	28
Adhesive layer	HSFC	μm	8
Total bio-based cont.		%	85
180° Peel strength to PMMA		N/25 mm	6.2

### Materials

Bio-HDPE : SHE150 (Braskem S. A.)

Bio-based cont. 94%, MFR 1.0 g/10 min. (190 deg. C, 2.16 kg)

HSFC : SEPTON™ BIO-series SF904 (Kuraray Co., Ltd.)

Bio-based cont. 50%, MFR 15 g/10 min. (190 deg. C, 2.16 kg)

# Molding conditions

	Base material layer	Adhesive layer
Extruder	GM30-28 (GM engineering Co., Ltd.)	GM25-25 (GM engineering Co., Ltd.)
Screw	Single	Single
L/D	28 ( $\phi$ 30)	25 ( $\phi$ 25)
Feed block	Selector plug	
T-die	T300 (Coat hanger type)	
Temp.	190 deg. C	

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