



Shin-Etsu Film

Packaging Film

Laminate Bags for Silicon Wafer Case Packaging



Packaging Film

Laminate Bags for Silicon Wafer Case Packaging

The purity of silicon wafers used for ICs and other devices is 99.99999999% or higher, and control of surface cleanliness has reached the submicron level. The utmost care is required to prevent contamination when wafers are brought out of the strictly controlled environment of the clean room. Wafer cases (boxes) are used for wafer storage and transport. The atmosphere within the box must be isolated from the outside air to prevent contamination from debris, moisture and active gases. Our laminate bags for silicon wafer cases are laminated bags that meet these requirements. They are manufactured with the same meticulous cleanliness control as are the wafers themselves. Our lineup includes both clear laminate and aluminum laminate products.



■ Features

1. Our laminate bags feature a multiple laminated structure of films of different materials. This structure forms an outstanding gas barrier.
2. To prevent contamination of the packaged units, we use additive-free polyethylene (PE) for the innermost polyethylene layer of our laminated bags.
3. The inspection and primary packaging of our laminate bags are performed in Class 1000 clean conditions. (Our laminate bags are available in primary packages of 50-bag or 100-bag bundles, and are vacuum-sealed using a special inner bag.)
4. Shin-Etsu can manufacture pouches to custom specifications in terms of laminate structure, laminate properties (strength, etc.), bag shape, and dimensions.
5. We can also supply rolls of sheet material for pillow packaging.

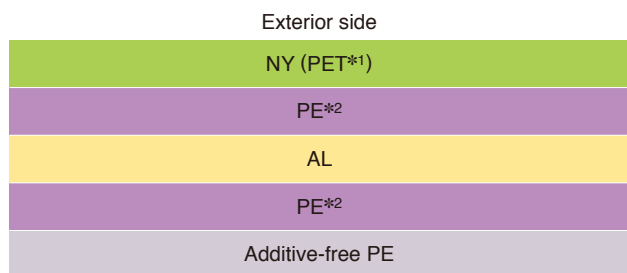
■ Laminate structure (sectional view)

A: Clear laminate



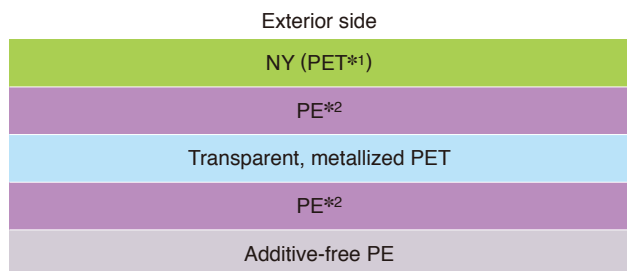
*1 For the outermost layer, PET can be substituted for NY.
 *2 Dry specification (lamination using adhesive) also possible.

B: Aluminum laminate



*1 For the outermost layer, PET can be substituted for NY.
 *2 Dry specification (lamination using adhesive) also possible.

C: Aluminum-free laminate



*1 For the outermost layer, PET can be substituted for NY.
 *2 Dry specification (lamination using adhesive) also possible.

Legend

NY : Nylon
 PE : Polyethylene
 AL : Aluminum foil
 PET : Polyethylene terephthalate

■ General properties

Item		Unit	Clear laminate (A)	Aluminum laminate (B)	Measurement method
Tensile strength	MD	N/15 mm	54	74	JIS K 7127
	CMD		64	78	
Tensile elongation	MD	%	110	100	JIS K 7127
	CMD		100	100	
Puncture strength	Face	N	11.8	12.7	JIS Z 1707
	Back		12.7	12.7	
Tear strength*1	MD	N	0.5	0.7	JIS K 7128-2
	CMD		0.5	0.9	
Oxygen permeability*2		cm ³ /m ² ·24 hr·atm	31	non detected	JIS K 7126
Moisture permeability*3		g/m ² ·24 hr	5	non detected	JIS Z 0208

*1 Grab width: 50 mm; tensile speed: 200 mm/min

*2 Detection limit: 0.01 cm³/m²·24 hr·atm

*3 Detection limit: 0.12 g/m²·24 hr

(The above values are measured values, not guaranteed values.)

■ Heat seal characteristics

Unit: N/15 mm

Temperature (°C)	90	100	110	120	130	140	150	160	180
Clear laminate (A)	0	0.05	0.2	3.9	58.8	59.8	60.8	59.8	57.8
Aluminum laminate (B)	0.04	1.0	9.8	40.2	41.2	41.7	42.1	42.6	44.1

Seal conditions: pressure=98 kPa, time=1 sec

(The above values are measured values, not guaranteed values.)

■ Product classes

● Clear laminates

Size	Width (mm)	Height (mm)	Length (mm)	Thickness (μm)	Remarks
4" (inch) ø	140	120	360	75	
5" ø	165	140	400	75	
6" ø	210	170	470	75	
6" ø	195	160	440	75	
8" ø	280	260	600	75	
8" ø	285	265	600	75	diagonal sealed
12" ø	430	360	850	85	diagonal sealed

Shin-Etsu can also supply products in dimensions not listed here.

● Aluminum laminates

Size	Width (mm)	Height (mm)	Length (mm)	Thickness (μm)	Remarks
4" (inch) ø	145	125	360	112	
5" ø	175	155	405	112	
6" ø	210	185	470	112	
6" ø	200	170	430	112	
8" ø	280	270	615	112	
8" ø	285	275	615	112	diagonal sealed
12" ø	440	370	880	108	diagonal sealed

Shin-Etsu can also supply products in dimensions not listed here.

■ Storage and Handling Precautions

- Store out of direct sunlight in a cool place with low humidity.
- Avoid contact with solvents or oils as they may deteriorate the properties of the materials.

Contact Shin-Etsu Film for information about our laminate bags for silicon wafer case packaging.

Shin-Etsu Film Co., Ltd.

Stage Uchikanda, 3-8, Uchikanda 1-chome, Chiyoda-ku, Tokyo, 101-0047, Japan

TEL +81-3-3259-1061 FAX +81-3-3259-1064

<http://www.shinetsu-film.co.jp>

- The data presented in this catalog may not be relied upon to represent standard values.
Shin-Etsu reserves the right to change the data and information in this catalog without notice.
- Before using these products, be sure to perform tests to determine the suitability of the product for the intended application.
Furthermore, statements concerning possible or suggested uses made herein may not be relied upon or construed as a guarantee of no patent infringement.