



Shin-Etsu Film

Packaging Film

Gusset Pouches for Silicon Wafer Case Packaging



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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 gusset pouches 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. 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.

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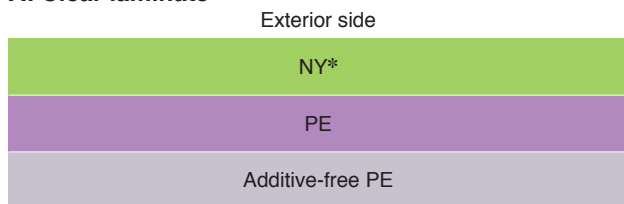


Features

1. Our gusset pouches and other laminated bags feature a multi-ply 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 gusset pouches and other clean packaging bags are performed in Class 1000 clean conditions. (Our gusset pouches 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.), pouch shape, and dimensions.
5. We can also supply rolls of sheet material for pillow packaging.

Laminate structure (sectional view)

A: Clear laminate



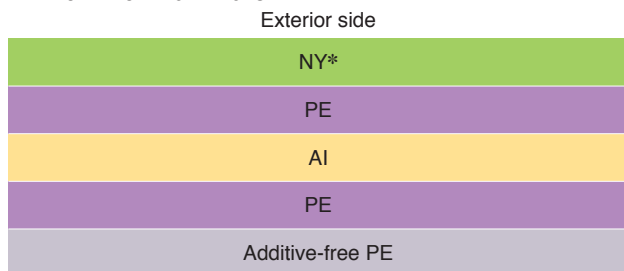
* For the outermost layer, PET can be substituted for NY.

Dry specification (lamination using adhesive) also possible.

Legend

NY : nylon
 PE : polyethylene
 Al : aluminum foil
 PET : polyethylene terephthalate

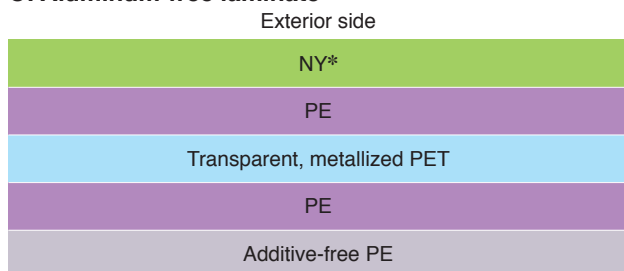
B: Aluminum laminate



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Dry specification (lamination using adhesive) also possible.

C: Aluminum-free laminate



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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	0	0.05	0.2	3.9	58.8	59.8	60.8	59.8	57.8
Aluminum laminate	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	Model no.	Width (mm)	Height (mm)	Length (mm)	Thickness (μm)	Remarks
3" (inch) ø	MW-001N	115	95	340	75	
4" ø	MW-003N	140	120	360	75	
5" ø	MW-005N	165	140	400	75	
6" ø	MW-011N	210	170	470	75	
6" ø	MW-017N	195	160	440	75	
8" ø	MW-020N	280	260	600	75	
8" ø	MW-022N	280	260	750	75	
8" ø	MW-032N-S	285	265	600	75	diagonal sealed
12" ø (for 13-ply type)	MW-026N	390	240	745	75	diagonal sealed
12" ø	MW-060N	430	360	850	85	diagonal sealed

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

●Aluminum laminates

Size	Model no.	Width (mm)	Height (mm)	Length (mm)	Thickness (μm)	Remarks
3" (inch) ø	MW-002	125	105	340	112	
4" ø	MW-006	145	125	360	112	
5" ø	MW-006	175	155	405	112	
6" ø	MW-012	210	185	470	112	
6" ø	MW-018	200	170	430	112	
8" ø	MW-021	280	270	615	112	
8" ø	MW-021-L	280	270	640	112	
8" ø	MW-033-S	285	275	615	112	diagonal sealed
12" ø (for 13-ply type)	MW-027	400	250	745	87	diagonal sealed
12" ø	MW-061	440	370	880	102	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 gusset pouches
for silicon wafer case packaging.

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the suitability of the product for the intended application.
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