



# ASO Clean Laminated Bag



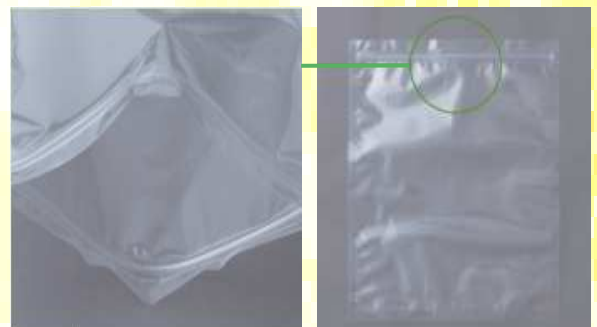
“ASO Clean Laminated Bags” are produced in our class 10000 cleanroom using our new processing method, which achieves a very high level of cleanliness. Hence, we avoid the greatest disadvantage of laminated bags produced by the conventional processing method - inadequate cleanliness of the film surfaces.

The additive-free polyethylene film used in ASO Clean Film is used as the innermost layer that comes in contact with contents. Hence, the risk of additives bleeding out and insoluble particles being produced is minimal. No adhesive is used to bond the films, which makes the Clean Laminated Bag appropriate for use in the pharmaceutical and electronic device applications.

## Features

1. The “**ultraclean laminated bags**” are produced in our class 10000 cleanroom. Dedusting of both surfaces of the plastic films, which is generally impossible for reclosable bags, is achieved using a state-of-the-art processing method.
2. The “**completely additive-free material**” used for many years in “ASO Clean Bags” is used for the innermost layer that comes in contact with the contents. Hence, this product can be used without having to worry about problems caused by additives. Clean Laminated Bags can be used directly, instead of needing place a clean plastic bag inside a standard laminated bag.
3. “ASO Clean Laminated Bags” are “**sealed in packs of a unit number of bags**” and can be kept clean until required.
4. Upon your request, we can also provide “**gamma-ray sterilized bags**”.
5. Reclosable laminated bags are also available. For details, contact us.

<Reclosable type>



## Comparison of particles adhering to the inner surface of the bag

The following tables compare the numbers of particles adhering to the inner surface of our Clean Laminated Bag and commonly used Standard Laminated Bag. Relatively new plastic bags produced about one week before testing were used.

ASO Clean Laminated Bag (PET/Additive-freeLDPE) 200 × 280							
Particle size		2 μm	3 μm	5 μm	10 μm	25 μm	40 μm
Blank water	Measured value	0	0	0	0	0	0
		0	0	0	0	0	0
		0	0	0	0	0	0
	Maximum	0	0	0	0	0	0
	Average	0	0	0	0	0	0
	Minimum	0	0	0	0	0	0
Product	Measured value	13	8	1	0	0	0
		16	9	1	0	0	0
		13	7	2	1	0	0
	Maximum	16	9	2	1	0	0
	Average	14	8	1	0	0	0
	Minimum	13	7	1	0	0	0

Standard Laminated Bag (Ny/PE) 200 × 280							
Particle size		2 μm	3 μm	5 μm	10 μm	25 μm	40 μm
Blank water	Measured value	0	0	0	0	0	0
		0	0	0	0	0	0
		0	0	0	0	0	0
	Maximum	0	0	0	0	0	0
	Average	0	0	0	0	0	0
	Minimum	0	0	0	0	0	0
Product	Measured value	116,390	85,184	25,796	3,809	25	0
		122,669	90,921	28,698	4,604	32	0
		123,393	91,859	29,095	4,685	24	0
	Maximum	123,393	91,859	29,095	4,685	32	0
	Average	120,817	89,321	27,863	4,366	27	0
	Minimum	116,390	85,184	25,796	3,809	24	0

※The above figures are not guaranteed values but measured values.

Measurement  
method

The bag was filled with 100 mL of dust-free water with the blank count close to zero, and then tied at the top. Then 10 mL of the water was taken out of the bag and the number of particles in this sample was counted. This measurement was repeated three times and the average value calculated. The total counts are shown in the above tables.

※Measuring device: Particle counter from RION

## Strength and other physical properties

		ASO Clean Laminated Bag (PET/Additive-freeLDPE)		Measurement method
Tensile strength [N/mm <sup>2</sup> ]	MD	43.1		JIS Z-1702
	TD	34.7		
Elongation [%]	MD	73		JIS Z-1702
	TD	72		
Tear strength 4 sheets (N)* <sup>1</sup>	MD	0.40		JIS K-7128-2
	TD	0.90		
Seal strength [N/15 mm]	Side	36.3		Our measurement method
	Bottom	40.1		
Oxygen gas permeability [ml/(m <sup>2</sup> ·d·Mpa)]			3382	JIS K-7126-2
Moisture permeability [g/(m <sup>2</sup> ·24h)]			7.6	JIS Z-0222

\*1--The figures show measured values for four sheets laid one on top of the another.

\* The table shows measured, not guaranteed, values.



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