

Anti-Reflection Film HD Series

High durability optical film with superior abrasion of the anti-smudge layer

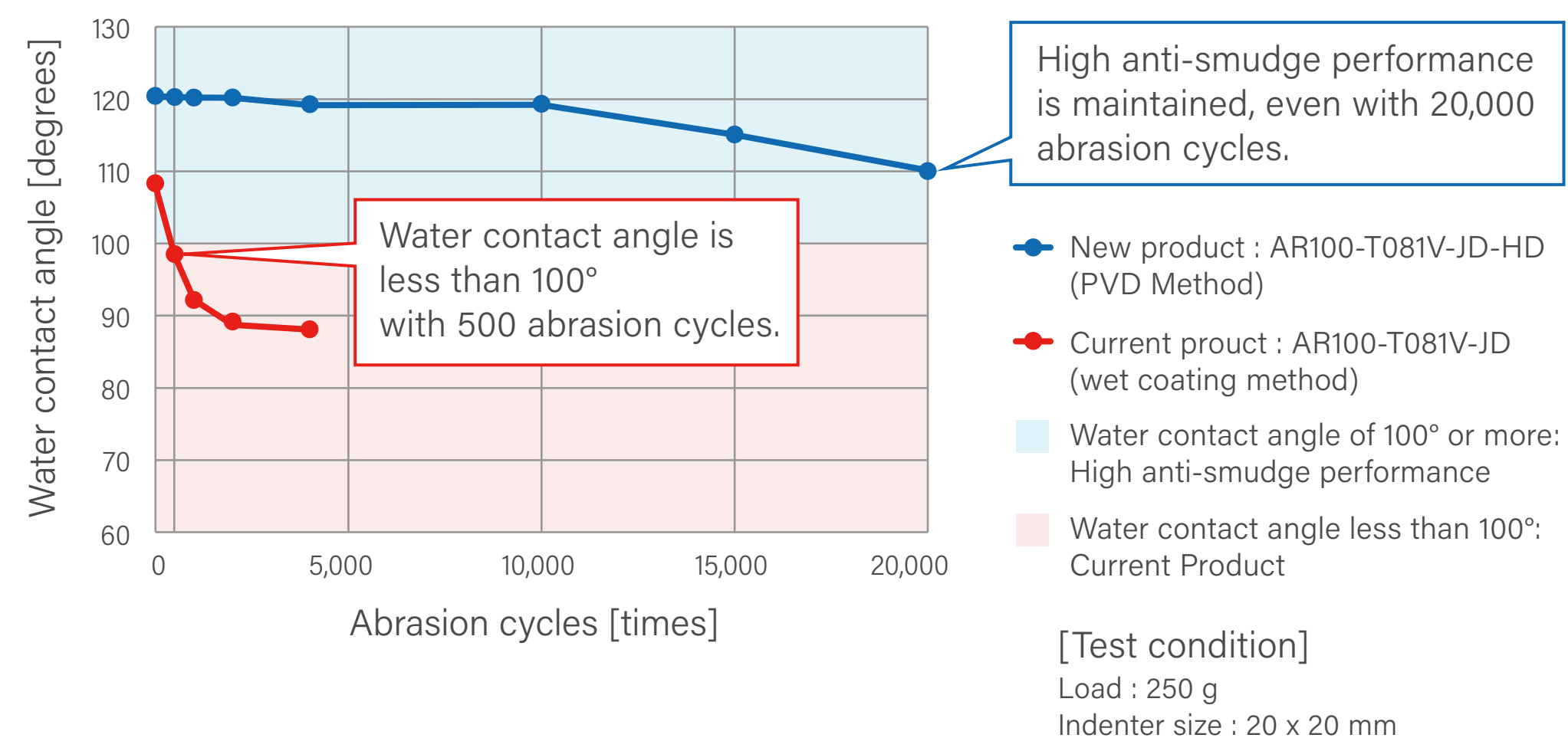
Product Name AR100-T081V-JD-HD AR100-T082V-AD-HD
AR100-T062V-BD-HD

Features

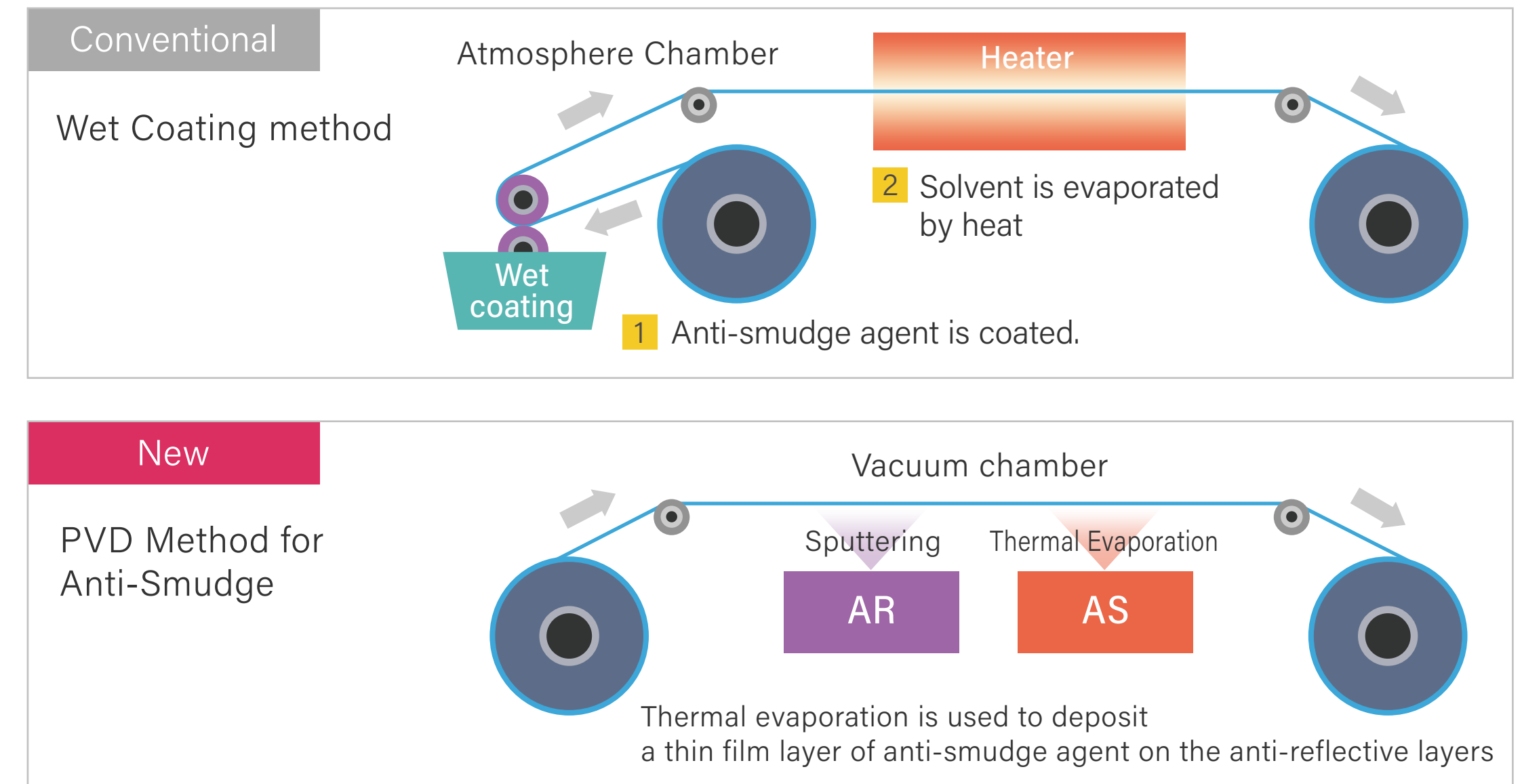


- High durability of the anti-smudge layer with significant increase in abrasion resistance due to applied vacuum deposition method.
- Improved anti-smudge function with increased initial water contact angle.

Abrasion Durability Test (nonwoven fabric wiper)



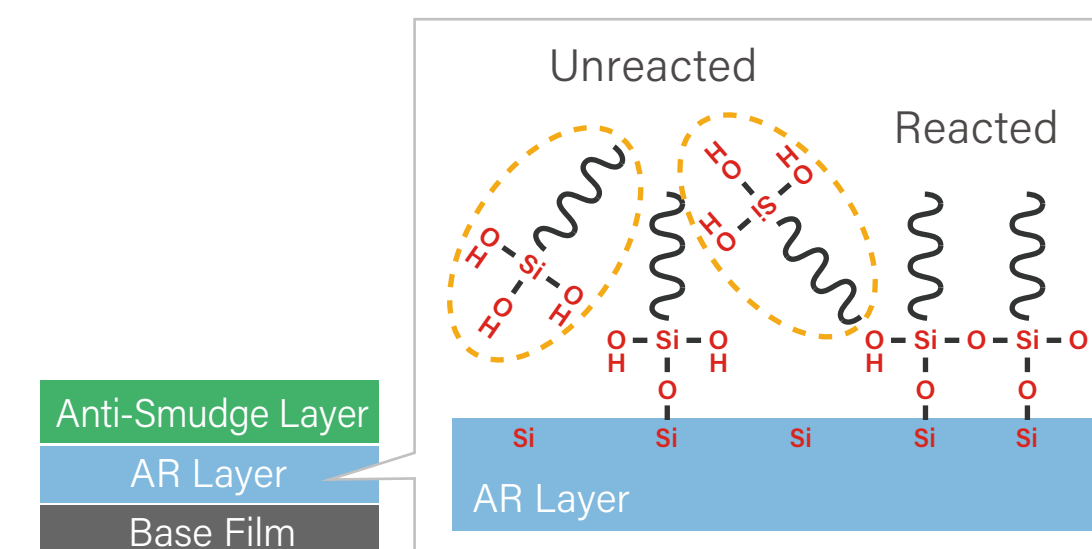
Comparison of anti-smudge layer forming methods



Mechanism of alignment of fluoropolymer

Wet Coating method

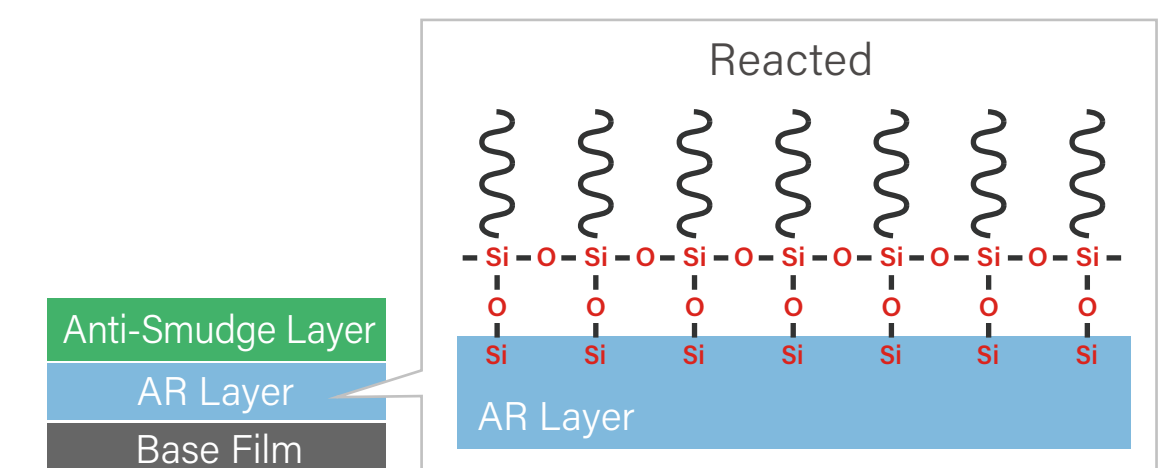
Some SiO₂ groups are not bound to fluoropolymer chains on anti-reflection layer



PVD method

Reacted groups are uniformly arranged and aligned. As a result:

- Bonding strength is higher
- Polymer is denser and harder
- Polymer is less permeable



Comparison of properties

		New product	Current product	Test condition
Product name		AR100-T081V-JD-HD	AR100-T081V-JD	
Method for forming the anti-smudge layer		Vacuum Deposition Method	Wet Coating Method	
Haze	%	0.3	0.3	JIS K7105-6.4
Total transmittance	%	96.2	96.4	JIS K7105-5.5
Luminous reflectance	%	0.18 / 0.29 ^{*3}	0.18 / 0.32 ^{*3}	JIS Z8701
Hue of Reflectance	a *	1.5 / 2.2 ^{*3}	1.4 / 2.0 ^{*3}	JIS Z8781
	b *	-7.2 / -8.1 ^{*3}	-6.3 / -7.5 ^{*3}	
Pencil Hardness		3H	3H	Measured with a load of 750 g based on JIS K5600-5-4

- *1 : Comparison with our company's current product (AR200-T0810-JD) using the abrasion durability test (nonwoven fabric wiper)
- *2 : Based on our company test
- *3: Specular reflectance / SCI (Specular component included)

Lineup / Technical data

Product name		AR100-T081V-JD-HD	AR100-T082V-AD-HD	AR100-T062V-BD-HD	Test condition
Luminous reflectance (Y)	%	0.18 / 0.29 ^{*1}	0.14 / 0.36 ^{*1}	0.11 / 0.32 ^{*1}	JIS Z8701
Hue of reflectance	a*	1.5 / 2.2 ^{*1}	1.1 / 1.7 ^{*1}	0.0 / 0.5 ^{*1}	JIS Z8781
	b*	-7.2 / -8.1 ^{*1}	-3.8 / -6.8 ^{*1}	-2.3 / -6.4 ^{*1}	
Haze	%	0.3	4.2	12.8	JIS K7105-6.4
Total transmittance	%	96.2	95.3	95.8	JIS K7105-5.5
Pencil hardness	–	3H	3H	3H	Measured with a load of 500 g based on JIS K5600-5-4 ^{*2}
Scratch resistance	–	No scrach	No scratch	No scratch	Steel wool abrasion 2000 gf x 20 times
Water contact angle	°	117.5	118.9	118.5	JIS R3257
Peeling strength	N/25 mm	10	10	10	90° peeling strength to glass

- *1 : Specular reflectance / SCI (Specular component included)
- *2: Without PSA

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