

OptiguardAROL™

OVERVIEW:

Optiguard AROL™ has been specially developed by Panel Graphic to enable more products to benefit from an affordable AR coating solution. Exceptional light transmission and anti-reflective properties combined with excellent durability makes **Optiguard AROL™** the ideal solution for a broad range of applications.

NO minimum order quantities. **ANY** custom sheet size - minimal waste.
ANY material. **ANY** thickness. **ALL** from stock ensuring short lead times.

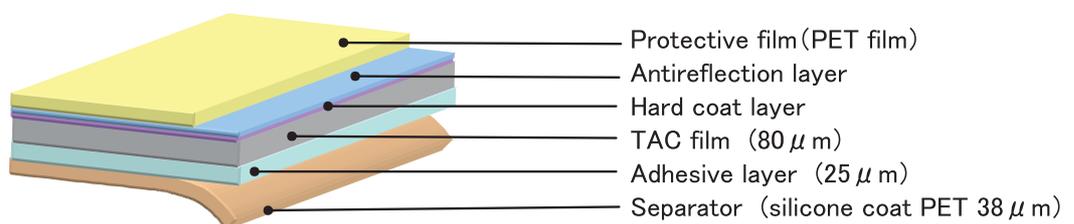


Optiguard AROL™ coating will dramatically reduce scratching when applied to acrylic or polycarbonate sheet giving surface hardness approaching that of glass together with superior resistance to chemical attack.

Optiguard AROL™ is suitable for internal and external use but it is recommended that UV stable substrates be used when exposed in direct sunlight.

STRUCTURE:

Optiguard AROL™



OptiguardAROL™

TECHNICAL DATA

FEATURES:

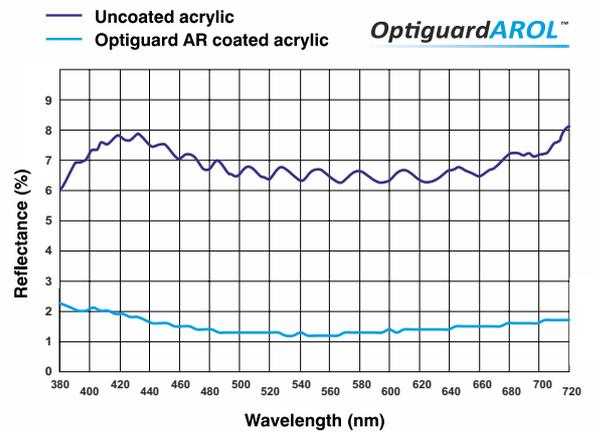
- 1) Excellent transmission and overall visual performance achieved by utilising optically clear adhesive.
- 2) The hard coat layer gives high levels of abrasion resistance with the added benefit of fingerprint resistance - also known as AFP or ETC.
- 3) Excellent durability. Environmental exposure testing to ISO 16474-3 method A, including exposure to 5% salt solution.
- 4) Suitable for application via pressure lamination process to a wide range of substrates including PMMA, Polycarbonate and Glass.

OPTICAL PROPERTIES:

Evaluation Item	Measured Value
Total Light Transmittance (%)*1	95.9
Haze (%)*1	0.4
Reflectance (%)*2	1.2

*1 Measured with film laminated to glass

*2 The regular reflectance of 5° is measured by spectrophotometer (550nm)
(Adhesive film adhered to glass, back painted black)



PHYSICAL PROPERTIES:

Adhesive Surface	Coating Thickness (µm)	Micrometer		25
	Adhesive strength for glass*3 (N/25mm)	For Glass	RT x 30min	15.0
			23°C x 65% x 24h	18.2
			65°C x 95% x 24h	23.5

*3 Peeling angle: 180°. Peeling speed: 300mm/min

Anti-Reflection Surface	Steel Wool Rubbing	No Scratches	# 0000 Steel Wool: 250g/cm ² x 10 (back and forth)
	Surface Hardness*4	4H	JIS K5400 (Value of the base film only)
	Coating Layer Density	100/100	Cross-Cut Test
	Contact Angle (°)	105	Water Contact Angle
	Fingerprint Removing Property	◎	-

*4 JIS K5400 compliant



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CHEMICAL RESISTANCE:

O: No Change
X: Minor change (dripping trace)

Chemical list	Concentration	After Dripping		
		Immediately	1 minute	5 minute
Ammonia aqueous solution	2%	O	O	-
	3%	O	-	O
Gasoline (lead-free)	100%	O	O	-
Detergent	10%	O	O	-
Weak alkaline detergent	10%	O	O	-
Saline	10%	O	O	-
	19%	O	-	O
Acetic acid	10%	O	O	-
Isopropyl alcohol	50%	O	O	-
Acetone	100%	O	-	O
Ethanol	100%	O	-	O
Methanol	100%	O	-	O
Acetic acid aqueous solution	2%	O	-	O

EVALUATION METHOD

1. Drop each chemical on the AR film surface so that it has a diameter of 10mm
2. After the stated time has passed, wipe off the chemicals with gauze
3. Visually evaluate any changes in the AR film surface

BONDING ADHESIVE:

Film Type: AROL / ARTAC40 / ARTAC60Z / AGLR80-6K / AGLRPET80

OCA Thickness:			25
High Temperature	95°C	500h	OK
		1000h	OK
High Temperature High Humidity	60°C/90%	500h	OK
		1000h	OK
Low Temperature	-40°C	500h	OK
		1000h	OK
Thermal Shock	95°C ⇌ -40°C 30min	500 cycles	OK
		1000 cycles	OK

*Test sample : Leave the samples laminated on the soda glass at ambient room temperature for one day, then test

*OK = No change of appearance (No film lifting, peeling, bubbling or yellowing)





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FILM COMPARISONS:

Item	Product					Measuring method
	AROL	ARTAC40	ARTAC60Z	AGLR80-6K	AGLRPET80	
Thickness Base Film	80 µm TAC	40 µm TAC	60 µm TAC	80 µm TAC	80 µm SRF-PET	-
Total light transmittance (%)	95.9	96.5	95.9	93.9	95.3	JIS K 7105
Haze (%)	0.4	0.4	0.5	5.8	7.5	JIS K 7105
Reflection (%)	1.2	0.4	0.19	1.2	0.94	5° Reflection (550nm)
Hydrophobic properties	○	-	○	○	○	-
Adhesive strength (N/25mm)	≥ 10	≥ 10	≥ 10	≥ 10	≥ 10	To Glass (after 24 hours)
Pencil hardness	4H	4H	4H	5H	4H	AR film itself (without OCA)
Application	Tablet Automotive Laptop PC	Tablet Automotive	TV VR device Interior material	Automotive	Automotive	-

○ : Yes
△ : No

