

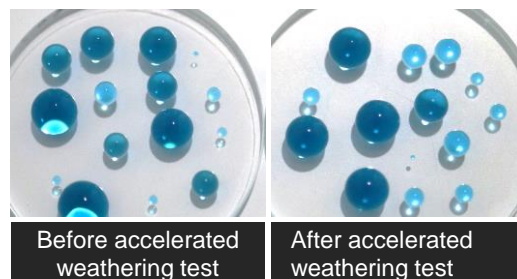
Ultra-durable water and oil repellent coating material

SURFCLEAR 300

Provides stable water and oil repellency even outdoors

Significantly lower degradation due to salt damage

Highly resistant to acids, alkalis, and other chemicals



Characteristic

- ◆ Water repellent: reduces the adhesion of water drops, water marks
- ◆ Antifouling: reduces the attachment of fingerprints, allows easy wiping and enhances durability
- ◆ Scratch resistant: reduces the occurrence of scratches due to decreased friction
- ◆ Low refractive index: provides less impact on optical properties
- ◆ Durable: outstanding UV resistance and performance continuance

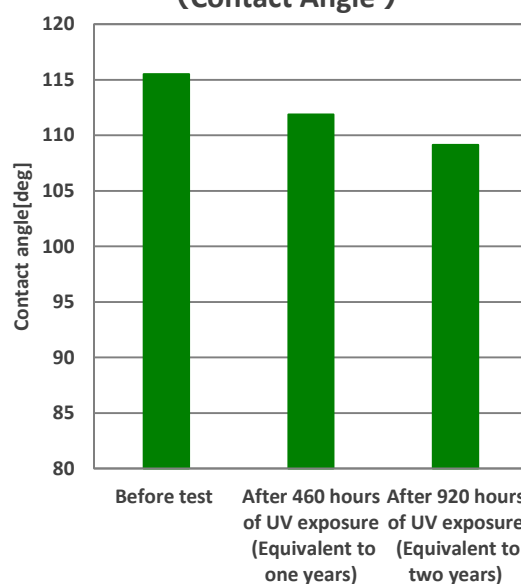
Basic Features

1. Contact angle: 115° (2.5 μl of pure water)
2. Sliding angle: 7° (30 μl of pure water)
3. Refractive index: 1.34(550 nm)
4. Recommended coat thickness: 10 nm

Durability Assessments

Characteristic	Test details	Contact angle [deg.]
Initial performance		115°
Weatherability(XW) (UV resistance)	Accelerated Weathering Test ^{※1} 920h (Equivalent to two years)	109°
Corrosion Resistance	Salt spray test ^{※2}	112°
	Acid Resistance Test ^{※3}	113°
Chemical resistance	Alkali Resistance pH12 Test ^{※4}	113°
	pH14	109°
Moisture Resistance	Humidity Test ^{※5}	113°
Resistance to wiping actions	Abrasion Resistance Test ^{※6}	112°

Accelerated Weathering Test (Contact Angle)



*1.Xenon weathering instrument (180 W/m²: photo irradiation + water spray)
(conforms with JIS K 5600-7-7)

*2.Neutral salt spray test (JIS K 5600-7-1 / continuous spray test) 192 hours of exposure

*3.After 240 hours of immersion in a pH 3 HNO₃ aqueous solution

*4.After 240 hours of immersion in a pH 12 NaOH aqueous solution

After 24 hours of immersion in a pH 14 NaOH aqueous solution

*5.1,000 hours of exposure at 85°C and 85 percent relative humidity

*6.5,000 abrasion cycles with a 1 kg steel wool load

Values described in this document are actual measurements, not product specification values.

Please make sure that this product is fit for purpose, including performing preliminary tests, before starting to use it.

Applications



Product Lineup

Product Name	Size	Size Corresponding to Evaporation System*
SURFCLEAR 300(M)	Φ18 × 7t [mm]	≦ Φ900 [mm]
SURFCLEAR 300(L)	Φ18 × 7t [mm]	≦ Φ1300 [mm]

*The corresponding size is an approximation, and is not guaranteed.



Appearance

Deposition Condition Examples

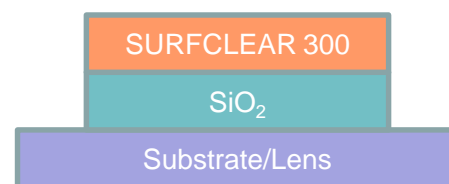
Deposition Conditions	
Chamber diameter	Φ900 [mm]
Evaporation source	SiO ₂ : Electron beam SURFCLEAR 300: Resistance heating (W boat)
Oxygen introduction	None
Ion assist (IAD)	None
Evaporating distance	900 [mm]
Substrate heating	No heating
Film thickness	SiO ₂ : to be terminated when deposition reaches 100Å SURFCLEAR 300: to be terminated when the light value on the monitor stops decreasing at a certain point
Degree of vacuum at start of evaporation	1.0 × 10 ⁻³ [Pa] or lower
Substrate to be vapor-deposited, size	Optical glass BK7 Φ30 × t 3 [mm]

SiO₂ Electron beam Conditions

	AMP.	Emission current [mA]	Time [min'sec]
Pre-melting	5.0	140→70	1'30"
Evaporation	5.0	Rate control (1 Å/sec)	Approximately 1'30"

SURFCLEAR 100 Resistance Heating Conditions

	Current [A]	Time
Evaporation	90	(Until fully evaporated)



Film Structure

- All the data listed in this Pamphlet Data are either values measured by our company or quoted from the literature. However, we cannot accept any liability for any troubles or damage caused by using any of these data.
- In order to use the product safely and correctly, please first read the Product Safety Data Sheet.
- Pamphlet Data contained herein is the data as of October 2020.
- Note that the specifications of this Pamphlet Data and/or product appearance are subject to change for improvement, etc. without prior notice.
- We reserve all rights to this Pamphlet Data.
- Please contact us for any inquiries/requests about the product, for more details, or for product catalogs, etc.

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