

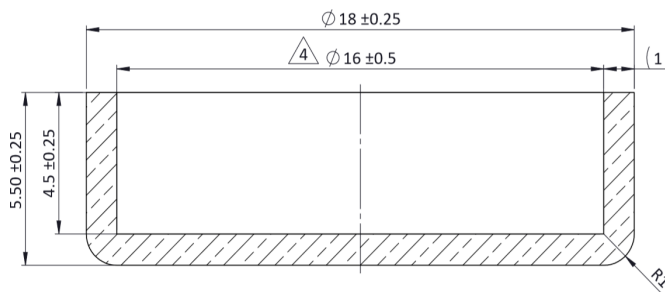
Product Information

Super Oleo R A-2477

General Information

Super Oleo R was developed for the deposition of oleophobic layers by evaporation in vacuum and has the ability to greatly reduce the hygroscopic effect of original thin films. Topcoats made of Super Oleo R on AR coated glass or plastic substrates exhibit extreme anti-wettability by water and oil therefore creating a lowered tendency to be contaminated by grease and finger prints. Super Oleo R was designed to molecularly bond to SiO₂ but can also be applied to uncoated, clean glass. Thin films used in conjunction with Super Oleo R will demonstrate reduced porosity, improved durability, and high level of cleanability. Water contact angle is > 115 degrees.

The product Super Oleo R comes ready to use, consisting of carrier crucibles made of copper and stainless-steel wool doped with an antifouling agent. Super Oleo R is designed to work with chamber sizes up to 940mm / 37inches.

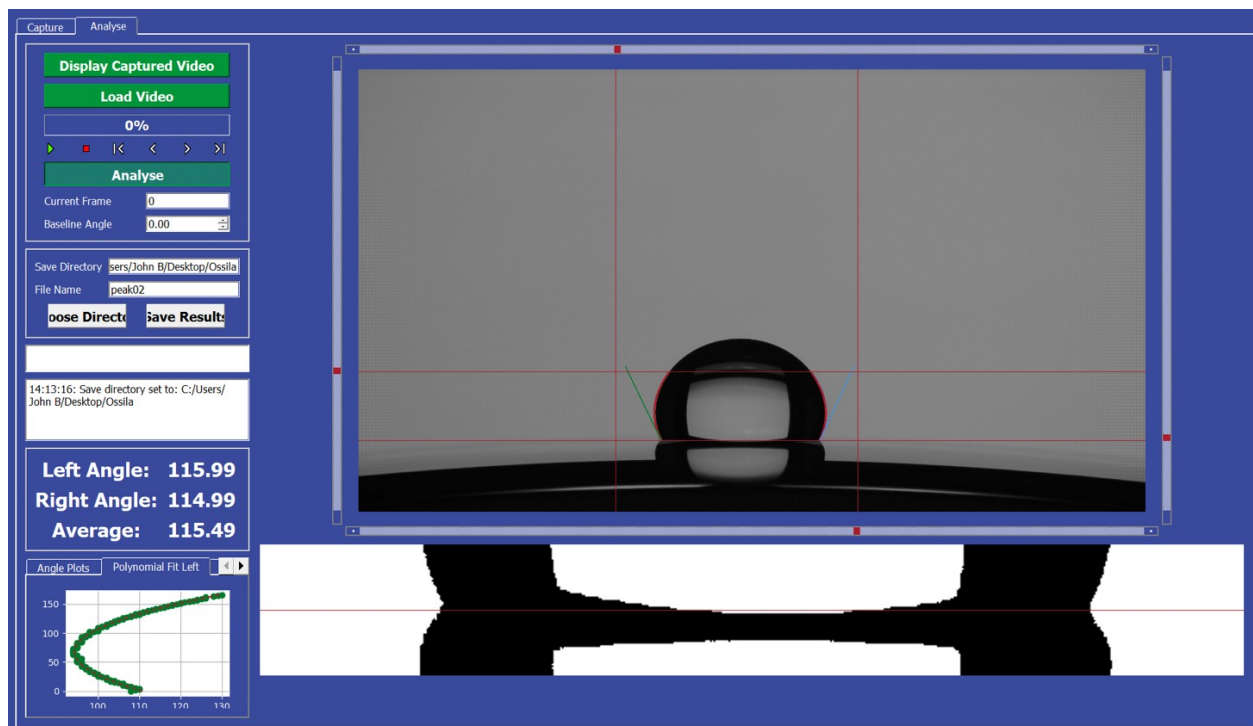


Areas of Application

Anti-fouling coating agent suitable but not limited to handheld device displays, ophthalmic lenses, glass lenses, and solar cell applications.

Thin Film Properties

Contact angle with water	>115°
Contact angle with hexadecane	>69°
After abrasion cotton cloth 4000 cycles	>109°
Tendency for fingerprint transfer	Good
Ease of fingerprint removal	Excellent
Sheer peeling strength of ice at -80° C	344 kPa
Coefficient of factor (Bauden-Leben)	0.13



Tips for Evaporation

Evaporator Source

- Resistance heated thermal evaporator
- Electron beam evaporator (indirect)

Tablet Holder

- For resistive heating: Box type or W boat
- For indirect e-beam heating: Mo or Ta liner with copper lid engineered to fit Super Oleo R

Evaporation Temperature

- 350 - 750° C
- Recommended 450° C

QCR Settings

- Density 1.0 g/cm³, Z-Ratio 1.0

Thickness (QCR)

- 20-25 nm (depending upon tooling factor)

The typical water contact angle of Super Oleo R should be larger than 114°.

The refractive index is approximately 1.50 in the visible spectral range.

No major deterioration occurs by wiping with a cloth or after boiling in salt solution (5% of sodium chloride in water) for 10 minutes. Furthermore, no delamination occurs after tape testing.

Shelf life of hermetically sealed Super Oleo R is 6 months from date of manufacture. Cold storage is recommended. For purposes of physical vapor deposition, the more moderate resistive source of heating is preferred over e-beam heating. If e-beam heating is unavoidable or preferred, the e-beam should not be focused directly on the chemical vessel and a vessel lid or crucible lid should be used. After opening the shutter, the boat current should be set to a low and constant value. Onset evaporation usually occurs after approximately 60 -90 seconds. Deposition times can vary depending on thickness but can last up until 300 seconds for depletion of tablet. The evaporated Super Oleo R will form a thin fluorinated siloxane layer on the substrate. Excess material can be wiped off. For optimum spectral stability the spectral measurement of the coating should be performed after wiping off surplus material. Maximum durability is achieved for approximately 25 nm thickness quartz crystal reading at 1.0 g/cm³ density setting.

Super Oleo R layer undergoes a ripening process post deposition at ambient conditions. Post treatment in warm and humid environment for a few hours reduces the ripening time.

Due to the diversity of deposition systems, specific results should be verified by a qualified process technician or engineer.