



Product Information

Super Oleo R - Cylinder A-2473

General Information

Super Oleo 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 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 was designed to molecularly bond to SiO₂ but can also be applied to uncoated, clean glass. Thin films used in conjunction with Super Oleo will demonstrate reduced porosity, improved durability, and high level of cleanability. Water contact angle is > 115 degrees.

The product Super Oleo - Cylinder comes ready to use, consisting of a brass beaded cylinder doped with an antifouling agent. Cylinder sizes are approximately 10mm in diameter and 12mm tall. Super Oleo is designed to work with chamber sizes up to 940mm / 37inches.

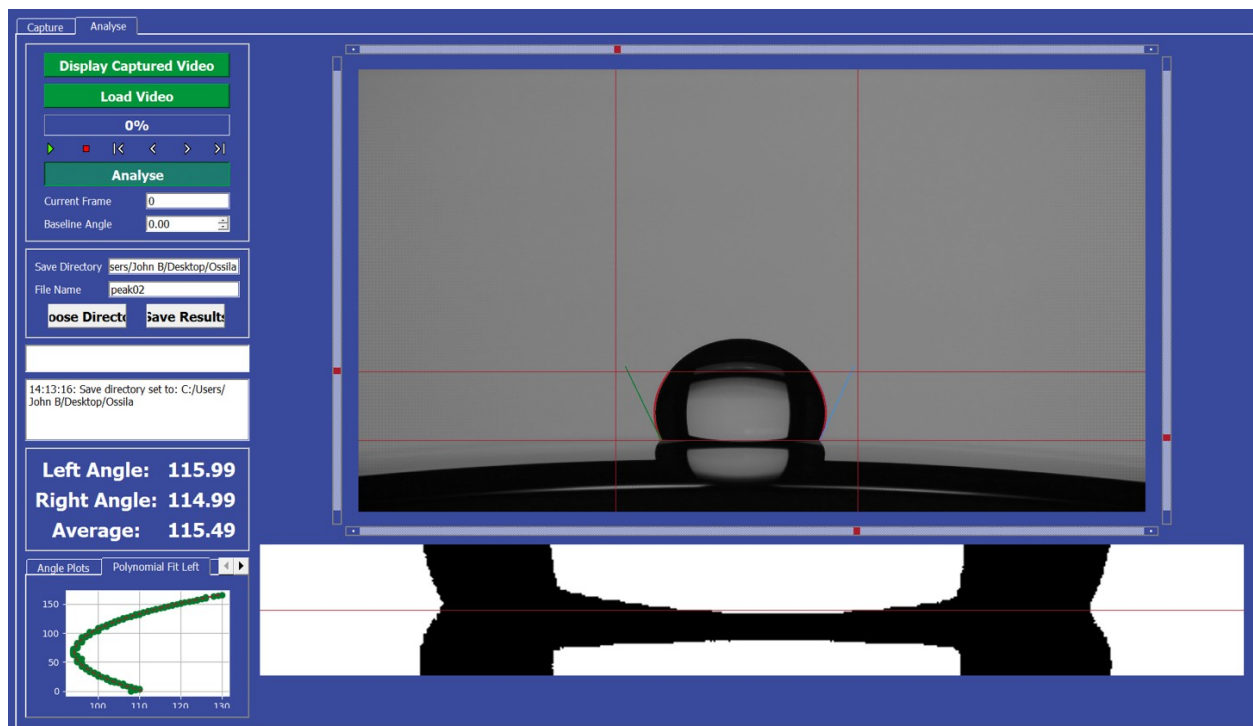


Areas of Application

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	>114°
Contact angle with hexadecane	>69°
After abrasion cotton cloth 4000 cycles	>104°
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

Evaporation Temperature

- 350 – 650° C
- Recommended 450° C

QCR Settings

- Density 1.0 g/cm³, Z-Ratio 1.0

Thickness (QCR)

- 25-30 nm (depending upon tooling factor)

The typical water contact angle of Super Oleo 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.

Please note that due to extreme low surface tension created by Super Oleo layer, any post processing methods of substrates may be affected and proper handling or intermediary layers could be required. Please consult with Aceso Optics if post processing is necessary.

Shelf life of hermetically sealed Super Oleo 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 selected, the e-beam should not be focused directly on the chemical vessel and the crucible liner should require a lid for shielding the carrier. After opening the shutter, the thermal source current should be set to a low and constant value. Onset evaporation usually occurs after approximately 45-75 seconds. The evaporated Super Oleo 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 25-30 nm thickness quartz crystal reading at 1.0 g/cm³ density setting.

Super Oleo 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.