

Optool UD509

Antifouling agent imparting the lowest coefficient of friction surface for a slippery finish and more pleasing touch sensation.

Product Features

- Fluorosolvent-borne modified PFPE
- Forms a durable bond with glass surfaces
- Effective on surfaces coated with SiO₂, but also applicable to other surfaces
- Highly transparent in the visible spectrum
- Can be applied by physical vapor deposition
- Can be applied by wet methods, such as spray, dip, spin, or flow coating
- Significantly reduces static and kinetic coefficients of friction of bare glass
- Applications include automotive displays, sensors and windshield glass; decorative metal parts; consumer electronics

Physical Properties¹

Typical properties of chemically strengthened glass coated with Optool applied via PVD

Item	Optool UD509	Optool DSX
Contact angle: Water		116°
Contact angle: N-hexadecane		68°
Sliding angle: Water	6°	8°
Sliding angle: N-hexadecane		6°
Abrasion durability: Steel wool ²	24,000 cycles	6,000 cycles
Kinetic CoF ³	0.03	0.07

¹: The above physical properties are representative and not guaranteed.

²: Maximum rubbing cycles with WCA above 100°: Steel wool #0000, Load: 1 kg / cm², Stroke: 6 cm, Speed: 60 rpm

³: Equipment: Labthink FPT-1: Load: 200 g, Speed: 200 mm / min, Friction pad: paper

Safety

Before using this product, please read the current Material Safety Data Sheet.

Hazardous when decomposed by heating to high temperatures (continuously at 200 °C and above)

Packing specification

- 0.1 kg

Application guide

Wet methods (Spray, Spin, Dip, Flow)

- Clean the substrate prior to treating with Optool (Plasma, UV / Ozone or chemical cleaning are generally effective)
- Prepare a dilute Optool solution by diluting in hydrofluoroethers, perfluorohexane or other suitable fluorinated solvents (such as 3M Novec HFE-7200)
- Starting point dilution: reduce the Optool polymer to 0.1 % by wt. (200-fold dilution)
- Apply the dilute solution evenly across the substrate surface
- Typical spray amount: 30 - 60 g / m²

Dry methods (Physical Vapor Deposition)

- Optool can be pelletized. Pellets are then heated in a PVD system to vaporize the Optool material.
- For best results, an SiO₂ adhesion layer should be deposited on the substrate prior to applying Optool

Post-Processing / Curing

Low temperature / elevated humidity:

- 60 °C, 90 % relative humidity, 1 hour

Elevated temperature / ambient humidity

- 150 °C, 30 min

Curing is required for chemical bonding to substrate

Excess uncured coating can be removed by wiping off or washing the surface with a fluorinated solvent after completion of the curing process.

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