Durable Antifingerprint and Oleophobic coating – DefensIz®

“IZOVAC Technologies” has developed an oleophobic and hydrophobic coating technology on glass and polymer surfaces. Oleophobic anti-fingerprint (AF) coatings could be combined with anti-reflective coatings (AR) on one glass. Due to easy to clean and anti-smudge (oleo- & hydrophobic) characteristics as well as high durability coating DefensIz® could be used in various industries.

“IZOVAC Technologies” offers customized details with oleophobic and hydrophobic coating. We’re looking forward to support your products with our expertise.

The multifunctional AR+AF coating is well suited for use in surface protection of optical glasses from contamination and mechanical scratches, as wear-resistant coatings for smartphones, technical displays, touch screens (including ruggedized, industrial, medical, public, gaming displays, etc.), architectural glass, and for variety of other applications.

Applications:
- Touch-screen displays
- Architectural glass
- Optics
- Automotive
- Photovoltaic
- and others

Advantages:
- Anti-reflective
- Anti-fingerprint
- Durable
- Easy-to-clean
- Water repellant
- Great haptics
- Antibacterial

With DefensIz coating

Without hydrophobic coating

Substrates (Materials):
DefensIz could be applied on:
- Float glass
- Optical glass
- Color glass
- Polymer
- ZnS
- LiF
- Etc.

Main features:
- High durability (10,000 cycles of abrasion steel wool with a load of 10 N);
- Stress resistance (the coating can withstand thermal shock from minus 40 to plus 85 ° C, 30 cycles, one cycle of 5 minutes);
- Light resistance (72 hours at 20 cm from the lamp power of 15 watts, generating ultraviolet radiation group B);
- Humidity resistance (72 hours at 95% humidity and 50 ° C)
- Resistance to organic solvents (250 cycles friction cargo weight 0.5 kg, abrasion strip length l=15 mm, the velocity v = 20 mm / s, the spattering of methanol every 50 cycles);
- Resistance to emulsions (Nivea Sun Spray SPF30, holding at 80 ° C and 80% RH for 24 hours);
- Acid resistance (pH 4.6, 48 hours aging);
- Inert to salt water (maintaining in the 5% NaCl solution 10 days at 35° C with the test result every 3 days);
- The antibacterial properties (bacteria do not multiply in the oleophobic surface);
- Low light reflection in combination with antireflection coatings
Long-term Durability – the breakthrough for any professional touch application

IZOVAC Technologies offers an extreme long-term resistance of the coatings, keeping up to 10,000 cycles of abrasion steel wool with a load of 10 N. In this case the contact angle of water remains in the range of 115-105°.

Fig.1. Prototype of the oleophobic coater

Results of the durability test of oleophobic coatings obtained by various technologies are shown on Fig.2. Tests are made with iron wool under a load of 1 kg on an area of 1 cm².

Fig. 2: Durability comparison of oleophobic coatings obtained by chemical grafting of molecules onto the glass from solute (1), by vacuum evaporation (2) and using our developed method (3,4) applying the DefensIz film to the glass (3) and AR coating (4).

Portfolio offered by IZOVAC Technologies:
We assess Customers’ needs and prepare specimens for evaluation.
IZOVAC Technologies is capable to make small batches as well as mass series.
On request, IZOVAC Technologies could design and manufacture coating plant that could be integrated into your production capacity.