

HCoating NF and Anti-Reflective Coating

Hard coating, anti-fog coating, and anti-reflection coating are the three main types of protective films for eyeglass lenses.

Hard coating can work on its own to protect lenses from scratches and wear. It can also act as a primer between the lens and the anti-reflection coating, helping to stick the anti-reflection layer in place.

Anti-fog coating has less hard components in its formula, making room for anti-fog ingredients. Its molecular structure is more flexible, which is why anti-fog coatings are usually not as hard as hard coatings.

Because there are lots of hydrophilic anti-fog components, hydrophobic surfactants have to be used to balance them out. This causes anti-fog coatings to repel anti-reflection coatings - something all anti-fog coatings struggle with.

US optical labs use NF to both prevent fogging and add hardness. The anti-fog effect is pretty noticeable, and the hardness improvement is good enough that customers don't complain or return their glasses. The cool surprise? The anti-reflection coating actually sticks to the NF anti-fog coating without peeling off.

What makes HCoating NF special is that it works with anti-reflection coatings, unlike other anti-fog coatings. Basically, the anti-reflection coating only sticks to NF surfaces and won't adhere to other anti-fog coatings at all.

Since NF anti-fog coating works well as a primer for anti-reflection coatings, what about using it as a top coat? Let's call this the H Hypothesis for now.

The theory goes like this: when NF forms a film under UV light, it could stick to the surface of an anti-reflection coating (AR), creating a permanent combo of anti-fog NF and anti-reflection AR effects.

Here's how it would work: NF anti-fog coating replaces the water-repellent layer on top of the anti-reflection coating, making the NF+AR combo possible! This is something thermosetting anti-fog coatings just can't do.

When used as a primer, NF only works with polycarbonate materials. But as a top coat, it could work with 70% of prescription glasses worldwide. Making our windows to the soul (glasses) both anti-reflection and anti-fog? That's pretty significant! So who's going to test the H Hypothesis?