NanoSonic, Inc.

PRODUCT INFORMATION
www.nanosonic.com

HybridShield/Sil® Hydrophobic Optical Coatings

MAJOR PROPERTIES

- Anti-icing
- Anti-fogging
- Anti-glare
- Self-cleaning
- Optically transparent
- Abrasion resistant
- Easy to apply

Photo: Demonstration of rapid spray application of NanoSonic's HybridShield Hydrophobic Coating

NanoSonic's novel HybridShield/Sil® hydrophobic optical coatings integrate innovative technologies with practical usage, making them applicable to a wide range of applications. Coating properties include anti-icing, anti-fogging, self-cleaning, and anti-glare functionalities that are all optically transparent, thereby increasing the overall functionality while preserving aesthetics and visibility. The coatings' characteristics extend even further with their durability and resilience, creating a scratch and abrasion resistant surface that is easy to apply, and even reapply, to an already existing material by simply spraying the coating onto the desired surface with an aerosol mister. The coatings are compatible with virtually all glasses, metals, ceramics, and a number of plastics.

NanoSonic's coatings are designed for application on both new and existing materials and products. Potential uses include as functional coatings on windows in buildings and vehicles, vision system components, measurement device optics, and display and projection system elements.

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Updated 14 April 2011

TECHNOLOGY DESCRIPTION

NanoSonic has developed multiple approaches with hydrophobic and superhydrophobic coatings to fabricate a self-cleaning coating on windows. Hydrophobic coatings generally have a high, water-contact angle such that water and other debris are "repelled" from the coating surface.

Left to right: Rapid Spray Application; Water Shedding; Self-Cleaning

The concept with hydrophobic coatings on optical components is to prevent water and associated dirt and debris from "sticking" to and accumulating onto the surface. If water, dirt, and other debris are repelled from the surface, then there is no possibility for dirt buildup, and the need for surface washing is eliminated. Similarly, if water and debris are repelled from the surface, then it will similarly be difficult for ice crystals to nucleate and accumulate on the coating surface.

NanoSonic has also developed a process for the application of HybridShield anti-fog coatings to optical surfaces that provide a high degree of functionality with low required material deposition quantities, translating to short processing times and low costs. Anti-fog coatings are designed to enhance wetting of a substrate by reducing the contact angle of water droplets on the surface. Fogging is generally attributed to millions of tiny water droplets beading on a surface, typically when a cold surface comes in contact with a warmer and/or higher humidity environment. The result is significant scattering of light through the beaded droplets. When the wetting is enhanced on the surface, the beads collectively bind together and sheet on the surface, thereby eliminating fogging.

ORDERING INFORMATION

For pricing or additional product information, please contact our HybridShield sales representative:
Phone: 540.626.6266
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