

## SurfaShield nextG in Spray-can

Spray-Canned Anti-Soiling, Hydrophilic & Photocatalytic Formulation for application on solar glass of photovoltaic panels or solar heaters

### Description



SurfaShield nextG is a patented (WO2021140346 (2021)), water/isopropanol-based liquid formulation that can be spray-applied on the glass of solar panels, based on fused silicon and photocatalytic titanium dioxide nanoparticles that can offer the following distinct advantages, after applied on the glass surface of photovoltaic, solar panels:

- Anti-reflective(=transparency increase) properties attributed to glass nano/micro-roughness decrease and Fresnel diffraction effect. A 2,5-3% increase in transparency is achieved.
  - Better light transmittance on high incident angle photons is attributed to the high refractive index of titanium dioxide particles. Diffuse light is better absorbed on SurfaShield nextG modified panels.
  - Anti-soiling and anti-static properties are attributed to the n-type semiconducting properties of titanium dioxide particles. The maintenance effort is significantly reduced.
  - Super-hydrophilic effect – No more water staining or need to use deionized water.
  - The self-cleaning effect is attributed to the photocatalytic impact, especially against organic deposits (e.g., bird deposits).
- Considering the environmental or ambient conditions, SurfaShield nextG can offer 3-10% extra energy output for your solar installation.

### Recommended Use

SurfaShield nextG in Spray-can is suitable for direct application on the glass surface of photovoltaic solar panels. It is especially recommended for roof-top solar installations or areas where the total number of solar panels does not exceed twenty.

SurfaShield nextG is not recommended to be applied on existing hydrophobic, silicone-type coatings, as further development of dry film thickness will adversely affect the anti-reflective properties.

### Key Benefits

- ☆ Anti-reflective (transparency) increase of solar glass
- ☆ Energy output increase
- ☆ Ultraviolet obstruction for weathering resistance
- ☆ Enhanced absorption of high incident angle photons for increased solar performance at diffuse light conditions (cloudy conditions or morning/evening light-time)
- ☆ Anti-static and anti-soiling properties for reduced dust or particle matter uptake
- ☆ Reduced maintenance and cleaning effort of solar glass
- ☆ Super-hydrophilic glass surface properties
- ☆ Reduction of water condensation and snow sliding, especially at high tilt angles (>25°)
- ☆ Photocatalytic, self-cleaning properties for breaking down organic deposits
- ☆ Photocatalytic, depollution of airborne contaminants

### Technical Specifications

<b>Type:</b>	Spray-canned, thin film coating formulation based on photocatalytic titania. Propellant Gases: Propane/Butane mixture.		
<b>Colour:</b>	Semi-transparent, milky white	<b>Thinner/Cleaner:</b>	None Required/ Water or Isopropyl alcohol
<b>Density:</b>	0,87 ±0,05 kg·L <sup>-1</sup>	<b>Volatile organic compounds</b>	574 g·L <sup>-1</sup>

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**Touch Dry Time:** 4h @ 25°C

(VOC) Content:

**Full Curing Time:**

24h @ 25°C

### Application

Clean the glass surface using water, isopropyl alcohol, or a regular glass cleaner, leaving no oily residues. Remove any dust, stains, deposits, or residues from the solar glass surface.

Glass temperature should be between 10°C (50°F) and 30°C (86°F). Shake the content of the spray-can thoroughly for 30 seconds before use. Hold the spray can upright at a distance of 20cm (8 inches) from the application surface during the application. Press the spraying trigger and, immediately, move the spray can parallel to the short panel edges, drawing a spray line in 2-3 seconds. Avoid over-spraying and overlapping spray lines. Continue spraying in parallel lines until covering the panel surface. The consumption rate is 30m<sup>2</sup> per L (1222ft<sup>2</sup> per US gal.). The spray can's content is enough to cover 3¾ of 1,6m<sup>2</sup> (17.2 ft<sup>2</sup>) or 3 of 2m<sup>2</sup> (21.5 ft<sup>2</sup>) solar panels. In excess of application, white streaks are visible 10 minutes after application. Rinse with plenty of water immediately and clean the surface with a soft sponge. Repeat the application by applying the correct consumption rate. Touch dry time: 15min at 20°C (68°F). Full curing: 4h at 20°C (68°F). Avoid relative humidity of more than 85% during application. Avoid exposure to rainy, wet, or moist conditions for four hours after application.

### Safety

Pressurized container: May burst if heated. Extremely flammable aerosol. Causes serious eye irritation. May cause drowsiness or dizziness. If medical advice is needed, have product container or label at hand. Keep away from heat, hot surfaces, sparks, open flames, and other ignition sources. No smoking. Do not spray on an open flame or other ignition source. Do not pierce or burn, even after use. Wear protective gloves/protective clothing/respiratory protection/eye protection/protective footwear. Protect from sunlight. Do not expose to temperatures exceeding 50°C/122°F. Dispose of contents/container according to the separated collection system used in your municipality. Keep out of reach of children.

### Storage

Expiration date: 9 months after production when stored and sealed in the original container. Store the containers sealed in a cool and well-ventilated place. Keep away from direct sunlight. Keep far away from heat sources, naked flames and sparks, and other ignition sources. Keep containers away from any incompatible materials.

### Health and Safety

Read the label before use. Safety Data Sheets are available through NanoPhos' website [www.NanoPhos.com](http://www.NanoPhos.com) or upon request by contacting NanoPhos through email: [info@NanoPhos.com](mailto:info@NanoPhos.com) or by telephone: (+30) 2292069312.

### Available Packaging

- **400mL (13.5 fl. oz) spray can**, arranged in a six pieces carton box (6 x 400mL arrangement).
- The Technical Data should be read in conjunction with the Safety Data Sheets. The current edition of this technical data sheet automatically cancels any previous one concerning the same product. For more information, please contact NanoPhos: [info@NanoPhos.com](mailto:info@NanoPhos.com)
- The technical data sheets and the recommendations for using NanoPhos products are based on our scientific knowledge, laboratory studies, and long-term experience. Therefore, the information provided must be considered indicative and subject to constant review in relation to the circumstances and each practical application. Furthermore,

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the product's suitability should be examined in each case for each specific use. The end-user bears complete & exclusive responsibility for any side effects that may arise from the incorrect use of the product.

- SurfaShield is a registered trademark of NanoPhos SA.



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