# 5575 Coating for PV / Solar Panels

This easy to apply coating was specifically designed to create a super durable, non-stick (hydrophobic and oleophobic) nano scale layer on the external surfaces of PV / Solar panels.

The coating prevents full bonding of contaminants to the surface and as a result water, dust, bird lime and other contaminants from environmental pollution are easily removed from the surface.

The easy clean effect is very pronounced and as a result the surfaces can be cleaned, if necessary, without using aggressive or abrasive agents. In many instances the panels become clean after heavy rain. **The outcome being enhanced performance of the solar panel.**

## PROPERTIES

- Strong hydrophobic and oleophobic effect – repels water and oil
- Excellent easy-to-clean effect – dirt can be easily wiped off
- High abrasion resistance – permanent chemical bond with the substrate
- Prevents degradation of the solar panel surface
- Temperature and UV resistant – ideal also for outdoor applications
- Enormous abrasion-resistance
- Strong anti-stick properties
- Breathable – the material remains diffusion-open
- Suitable for household and industrial use – chemical resistance up to pH 12
- Food-safe – inert
- Reduced cleaning cycles – saves time, energy, and costs
- Biostatic effect – inhibits the growth of microorganisms
- Food-safe (LFGB compliant, EU Regulation 1935/2004)
- Contact angle: approx. 92° (remains >70° after 200,000 abrasion cycles)
- 9H hardness (ISO 15184)
- Invisible to the human eye (coating thickness: 100-150nm)
- Self-cleaning effect on vertical surfaces (after heavy rain)
- Long-lasting effect
- Simple application (do-it-yourself)
- Easy to maintain

## PRODUCT SPECIFICATIONS & CHEMICAL PROPERTIES

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| **Base** | Silicon dioxide ($SiO_2$), alcohol-based |
| **VOC content** | 99 % (780 g/l) |
| **Flash point** | < 14 °C |
| **Dry film thickness (recommended)** | Approx. 60-150 nm |

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| **Viscosity** | Approx. 0,794 g/cm³ |
| **pH Value** | Approx. 7 |
| **Odor** | Characteristic |
| **Colour** | Colourless |
| **Consumption** | Approx. 4–10 ml/m² (up to 250 m² per litre) |
| **Temperature resistance** | -25 °C to +50 °C (including sunlight) |
| **Shelf life** | at least 2 years |
| **Application temperature** | -3 °C to +30 °C |
| **Shelf life** | Up to 3 years, depending on abrasion<br>(windscreens up to 6 months) |

## PFAS INFORMATION

**5575** is free of PFOS and PFOA and thus complies with applicable legal limits. Furthermore, the coating meets the current EU regulation 2024/2462, which sets a limit of less than 25 ppb for PFHxA and related substances. The total content of PFHxA in the **5575** coating is approx. 200 ppb, thus ensuring its unrestricted marketability within the EU.

Technical explanation of fluorine content:
The **5575** coating is not classified as "C Zero" because it contains small amounts of fluorinated additives. These are used in very low concentrations to ensure the necessary chemical bond and the desired oil and dirt repellence that are crucial for your application.

## APPLICATION & PROCESSING

### *Preparation*

It is essential that the target surface is completely clean before the application of the coating.

It is stressed that in many instances the end user considers that a surface is clean after wiping the surface with a cleaning agent until it looks clean. The preparation required before applying our coatings is much more thorough. On average it takes approximately 3-5 minutes to clean a solar panel.

1. We recommend that the surface is washed thoroughly with Biosativa® bio cleaner (supplied by CCM) mixed to a ratio of 1 to 15 (one part Biosativa®, 15 parts water). If you do not have access to Biosativa®; it is suggested that the surface is washed thoroughly with water and a micro-fibre cloth. If you do choose to use a cleaning agent other than Biosativa®, ensure that it does not leave any tensides on the surface as residues prevent the layer of $SiO^2$ (pure glass) from bonding. The layer formed is only 100nm thick (500 times thinner than a human hair). It is massively durable but as can be imagined this ultra-thin layer can only bond efficiently to a completely clean and dry surface.

2. This initial cleaning will remove heavy contamination such as insect residue, contaminants from vehicles etc. It should be noted that the use of Biosativa® will significantly enhance this initial

cleaning process. We do not suggest using washing liquid as this places tenside residues on the surface.

3. Thoroughly rinse the surface with clean water.
4. Dry the target surface with a clean cloth or suitable kitchen roll/absorbent paper. Please note that the perimeter of the panel is often heavily soiled and also water drips remain in this area. Wipe the perimeter of the panel ensuring that any soling agents are not spread to the rest of the surface.
5. Deep cleaning with alcohol. All solar panels differ in the amount of contamination held within the micro scratches (all surfaces have such scratches). Wipe the surface with the supplied wipe or use a suitable alcohol cleaner. The cleaner must be free of any additional polishing agents. (eg. some glass cleaners contain silicone). Continue to wipe the surface until the screen is completely clean. Ensure correct safety controls are followed when using alcohol. Follow the MSDS guidelines. Test alcohol cleaners such as IPA on an inconspicuous area.
6. After cleaning with the alcohol-based wipe, allow the surface to dry for 30 seconds+/- and then buff the surface with a micro-fibre of similar clean cloth.

*Application*

7. Apply the coating on to the surface using either a pre-impregnated wipe or apply the coating liquid to a suitable lint free cloth or microfiber. Working quickly, ensure full coverage of the surface. Wipe with both vertical and horizontal action to ensure full coverage. It is recommended that the outer edge of the panel is wiped as the last action to avoid any possible contamination of the central area of the panel. The pre-impregnated wipe from CCM contains 6ml of coating. This is optimised for coating an area of approximately 1.5m². If you are using your own wipe, we recommend that 10ml is applied to a lint free wipe which is approximately 150 x 150 mm. (This increased amount is suggested as the wipe medium which is being used may not be optimized for the coating and so it is wise to use a little more coating liquid.)
8. Allow the coating to dry for approximately 5 to 30 minutes. (5 minutes in warm weather e.g., 25°C… 30 minutes in cool weather e.g., 5-10°C).
9. After application the surface may look slightly “cloudy”. Buff the surface with a clean micro-fibre to remove any residue which contributes to the cloudy appearance. The surface should look polished.
10. The coating takes 24 hours to fully cure but the coated surface can be exposed to rain one hour after application. Do not apply the coating in damp or very humid conditions.

Do not apply the coating in hot, direct sunlight.

Do not apply our $SiO^2$ based coating on to surfaces which are coated with other agents, such silicones, or similar agents as the SiO2 coating will not bond effectively to these surfaces.

Do not apply the coating to solar panels if the surface of the panel is greater than 30°C. (in hot regions of the world it is best to apply the coating early in the morning or in the evening, when it is cooler). The ideal temperature for coating is approximately 15 to 20°C.

Do wear gloves as a fingerprint can be 100 times thicker than the coating.

## CLEANING & CARE

Aggressive cleaners are no longer necessary. Surfaces can be easily cleaned with a mild cleaner (e.g., CCM Bio Cleaner Biosativa®). Regular cleaning prolongs the effect. If the water-repellent effect diminishes, additionally clean the windshield and wipers with alcohol after cleaning.

## QUALITY STANDARDS & TESTS

- Antibacterial effect (TÜV) – >99.99% germ reduction
- Hydrophobicity test (TÜV) – water beads off at 50 km/h
- 9H hardness test (SGS) – ISO 15184
- Increased scratch and impact resistance (Erichsen test and ASTM D523/D2244)
- UV resistance – no yellowing after 2000 hours
- LFGB-compliant for food contact
- REACH tests – all limits met (no lead, no SCCPs, no SVHCs >0.1%)
- Solar module test – increased energy efficiency due to reduced soiling

## PACKAGING UNITS & VARIANTS

- 1 L bottle (7601-1)
- 200 L drum (7601-200)
- 1000 L IBC (7601-1000)
- Concentrate version (7658) available for 20 litres of ready-to-use solution.

## SAFETY & TRANSPORT

- Dangerous goods: Yes (UN 1170, Ethanol solution, Class 3, PG II)
- Hazard statements: H225 – Highly flammable liquid and vapor. H319 – Causes serious eye irritation.
- Personal protective equipment: Safety goggles and gloves recommended
- Disposal: According to local regulations

UN No.: 1219 – ISOPROPANOL (Packaging Group II)

For liquid containers, the regular dangerous goods regulations apply (ADR/IMDG/IATA).

For sachets (individually packed impregnated wipes), IATA DGR Special Provision A46 applies, a special rule: Not subject to ADR, as it is a "sealed package containing less than 10ml of a flammable liquid of Packing Group II or III, fully absorbed in a wipe."

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