

## TECNADIS SELF CLEAN PV

Nanotechnology-based treatment to increase the energy efficiency of solar panels

### Product description

Nanotechnology-based surface treatment that **increases the energy efficiency of solar panels**. It also protects surfaces from dirt stains, **reducing their accumulation mainly due to its additional anti-dust property** (it reduces the adherence of particles of soil, sand, etc.). In addition, thanks to the action of the treatment that facilitates the formation of a thin layer of water (**hydrophilic and self-cleaning effect**), it keeps glass cleaner for longer, making it more efficient in the use of incident light, achieving economic savings by **reducing maintenance and cleaning costs**.

### Uses

- Specially designed to be applied on photovoltaic panels (utility-scale/solar farms, industrial, commercial, residential).
- Also applicable to solar trackers.



### Features and advantages

- **Tecnadis SELF CLEAN PV** increases the performance of solar panels by more than 8% based on:

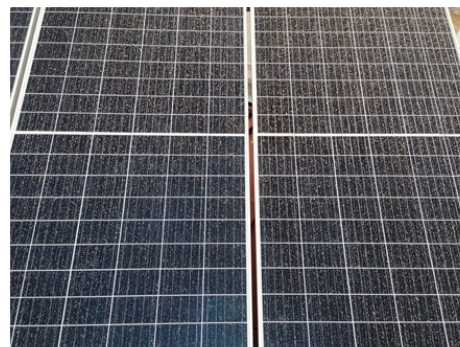
- ☑ **Improving transmittance**

It reduces the reflectance of visible radiation by 19%, thus increasing transmittance. This effect by itself results in an average yield increase of about **3%** (result and study carried out by **ITE, Technical Institute of Energy**).

- ☑ **Self-cleaning capabilities** (self-cleaning and anti-dust effect)

It keeps the solar panel cleaner for longer, favouring a better use of incident light, which translates into higher electricity generation. With this associated improvement, it is possible to **increase the performance** of the panels by more than **8%** (results obtained in real self-consumption installations).

Its self-cleaning effect reduces the adhesion of particles of sand, soil, etc. keeping glass surfaces cleaner for longer.



Untreated



SELF CLEAN PV

*(Images taken after sandstorm in Valencia - January 2021)*

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	<ul style="list-style-type: none"> <li>▪ <b>Totally transparent</b> coating, which does not modify the aesthetic of the glass, and even improves the transmittance of the visible light through it.</li> <li>▪ <b>Easy application</b> by spraying with an airless spray gun or manually (cloth, cleaning cloth, etc.).</li> <li>▪ Coating tested under standard <b>UNE-EN 61215</b>. Specific standard for the approval of photovoltaic modules for terrestrial use suitable for long-term operation in outdoor environments.</li> <li>▪ It maintains functionality after aging tests based on <b>ultraviolet test</b> (at 96KWh / m<sup>2</sup>), and <b>temperature cycle test</b> (52 cycles between -40°C and 85°C with an atmosphere of 85% relative humidity).</li> <li>▪ <b>Durability of 10 years</b> under normal conditions of use.</li> <li>▪ <b>Total UV resistance</b>.</li> <li>▪ It can be <b>directly re applied</b> after just a surface cleaning.</li> <li>▪ High yield (<b>25-30 m<sup>2</sup>/L</b>).</li> </ul>
<p><b>Product information. Composition and Physicochemical properties.</b></p>	<ul style="list-style-type: none"> <li>▪ <b>Colour:</b> Whitish transparent/translucent.</li> <li>▪ <b>Packaging:</b> 1L, 5L and 25L (larger volumes on request).</li> <li>▪ <b>Storage:</b> 12 months from date of manufacture in original sealed containers at temperatures between 5°C and 30°C.</li> <li>▪ <b>Active components:</b> &lt;5% wt</li> <li>▪ <b>Volatile Organic Content (VOC):</b> &gt;85% wt</li> <li>▪ <b>Boiling point:</b> 78°C</li> <li>▪ <b>Flash point:</b> ≤16,6°C</li> <li>▪ <b>Density:</b> 0,81 g/ml</li> <li>▪ <b>Viscosity:</b> 1,2 cP</li> <li>▪ <b>Solvent:</b> Ethanol</li> </ul>
<p><b>Surface preparation</b></p>	<p>Before application, carefully clean the surfaces and remove all traces of detergents and cleaners. The surface must be completely clean and dry. In the case of surface with high level of dirt, a cleaning thorough is recommended.</p>
<p><b>Application information</b></p>	<p><b><u>BY SPRAY GUN</u></b></p> <ul style="list-style-type: none"> <li>▪ THE CONTAINER MUST BE SHAKED VIGOROUSLY BEFORE ITS USE.</li> <li>▪ By spray gun (airless/paint gun), apply the product over the surface homogeneously either in one layer of higher quantity or in 2 thinner layers.</li> <li>▪ Apply with pressure higher than 4 bars.</li> </ul> <p><b><u>MANUALLY</u></b></p> <ul style="list-style-type: none"> <li>▪ THE CONTAINER MUST BE SHAKED VIGOROUSLY BEFORE ITS USE.</li> <li>▪ Apply the product on a cloth/cleaning cloth and spread over the entire surface until it is completely transparent.</li> </ul>
<p><b>Yields and storage</b></p>	<ul style="list-style-type: none"> <li>▪ Dilution: none</li> <li>▪ Average yield (for guidance only): 25-30 m<sup>2</sup>/l. Always apply the required amount of product, which will depend on the characteristics of the glass. It is recommended to carry out a preliminary test before application in order to determine the proper yield in each case.</li> <li>▪ Full drying time: The treated glass will show a hydrophilic effect immediately after application, achieving an optimal effect after 24 hours.</li> <li>▪ Optimal application temperature: between 5°C and 30°C.</li> <li>▪ Storage temperature: between 5°C and 30°C; protect from direct sunlight; store tightly closed in the original container.</li> </ul>

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### Handling precautions

The product safety information necessary for its safe use is not included in this document. Before using this product, read the material safety data sheets and the container labels for safe use and for information on physical and health hazards. The material safety data sheets are available and are supplied by TECNAN S.L. The application of the product must be carried out in a well-ventilated place. It contains volatile solvent (ethanol).

### Limited warranty information

**Please read it carefully:**

The information and recommendations in this document are given in good faith on the basis of TECNAN's experience and knowledge when stored, handled and applied correctly and under normal conditions within its useful life. However, because the conditions, types of materials to be treated and methods of use of our products are beyond our control, this information must be used correctly, verifying in preliminary tests that the product, the performance to be applied, the aesthetic finish and its purpose are suitable, even if other recommendations or advice have been received. TECNAN reserves the right to modify the properties of the product. TECNAN's only guarantee is that the product will comply with the sales specifications in force at the time of dispatch. Confirmation of payment and/or order implies acceptance of the product properties by the customer. TECNAN only guarantees the replacement of the product in the event of a manufacturing defect, and declines any other type of responsibility for the product, its application, as well as any additional damage it may cause. TECNAN specifically disclaims any other express or implied warranty of fitness for a particular purpose or merchantability. TECNAN declines responsibility for any damage caused accidentally or in case of incorrect use. Users must be familiar with the latest updated version of the Technical Data Sheet and for that TECNAN will provide a copy on request.