

# SOLAR GUARD

## TECHNICAL DATA SHEET

A-SOLAR

A photocatalytic self-cleaning protectant for PV (photovoltaic) panels.

### PRODUCT DESCRIPTION

Solar Guard is an alcohol-based photocatalytic self-cleaning protectant, intended for use as a protective topcoat over PV panels. Solar Guard is nano-formulated to absorb surrounding UV light to create a chemical reaction that works to break down organic growth and dirt build-up.

As a semiconducting catalyst, Solar Guard nanoparticles are light-activated to produce short-living oxidizing compounds: oxygen and hydroxyl radicals. Treated surfaces become super-hydrophilic and pollutants are easily washed away.

Solar Guard also acts as an antistatic agent, preventing sand and dust accumulation while enhancing anti-fogging properties of the glass surface.

PV panels treated with Solar Guard have shown an increase in transparency up to 3% and an increase in energy yield up to 9%.

### ADVANTAGES

- Self-cleaning
- Increases transparency up to 3%
- Increases energy yield by up to 9%
- Creates a super hydrophilic barrier, making cleaning easy
- Anti-fogging
- Anti-reflective
- Reduces cleaning frequency by up to 65%

### COMPATIBLE SUBSTRATES

- Photovoltaic panels

### USES

- Solar panels

### PRODUCT INFORMATION

Available Packaging

1 gal. unit

Storage Conditions

Store dry at 40-95 °F (4-35 °C)  
Store in a cool, well-ventilated area.  
Keep container tightly closed.  
Store locked up.

### TECHNICAL INFORMATION

Type	Alcohol-based suspension
Color	Milky white that dries clear
Odor	Slight rubbing alcohol odor
pH	9.29 ± 0.5
VOC Content	576 g/ liter
Melting Point / Freezing Point	Not available
Flash Point	> 75.2°F (24°C)
Viscosity	2.8 ± 0.5 cP @ 68°F (20°C)

## APPLICATION INFORMATION

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Coverage	~1400 sq. ft. / gallon (34.4m <sup>2</sup> /L, no dilution calculated)
Application Temperature	41-95°F (5-35°C)
Substrate Application Temperature	41-95°F (5-35°C)
Application Conditions	Surface and air temperatures must be at least 41°F (5°C) during application and for 8 hours following and should not exceed 95°F (35°C). Do not apply by sprayer in windy conditions to prevent loss.

## APPLICATION INSTRUCTIONS

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### EQUIPMENT

The preferred method of application is either HVLP sprayer or low-pressure pump spray. If applying by spray, please note our specifications of the air compressor you should be using below:

- **Type:** Portable with electric motor
- **Container Size:** 13 gallon
- **Power:** 3HP (2200 W)
- **Airflow:** 11.65 ft<sup>3</sup> (330L)/min
- **PSI:** 145 PSI (10 bar) high-pressure output

### SURFACE PREPARATION

1. Clean PV panels by power washing.
2. Isopropyl alcohol or a regular glass cleaner may be used, as long as no oily residue is left on the PV panels.
3. A standard mop or spinning wet mop may be used to clean off stubborn dirt and solid pollutants from the PV panels if necessary.
4. Squeegee to dry if necessary.
5. Allow surfaces to dry completely.

**DO NOT DILUTE PRODUCT. SHAKE CONTAINER WELL BEFORE USE. LOAD PUMP SPRAYER OR PAINT TRAY AFTER MIXING WELL.**

### APPLICATION

1. Ensure PV panel surface does not exceed 104°F (40°C) prior to application.
2. Install the pressure gauge between the air compressor and the HVLP spray gun.
3. Shake Solar Guard well. Do not dilute. Load into HVLP spray gun.
4. Regulate the HVLP sprayer so airflow pressure and product flow meet 1426 ft<sup>2</sup>/gal.
5. Application speed depends on flow regulation, but it takes an average of 35 seconds to apply each coat at 21.53 sq. ft (2 sqm).
6. Fully expand the HVLP spray fan and initiate spraying outside the application area to ensure flow stability.
7. Keep the spray gun 6-8 inches away from the PV panel and hold down the trigger for a constant flow rate.
8. Spray in parallel lines to cover the entire PV panel. Finish spraying outside the application area.
9. Allow to dry, then re-apply at a perpendicular direction to the original spray layer. Rotating the HVLP spray head will help.
10. Do not over-apply for optimal anti-reflection results.

## SAFETY INFORMATION

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Always read the product SDS for safety instructions and precautions before use. Use appropriate safety equipment and job-site controls during handling, application, and storage.

For further information regarding transportation, handling, storage and disposal of chemical products, users should refer to the SDS.

## WARRANTY

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The information and recommendations provided are based on thorough research conducted by ourselves and others, and we believe them to be accurate. However, we do not guarantee complete accuracy because it is impossible to cover every potential application of our products or anticipate all variations that may occur in substrates, surfaces, job conditions, and application methods. It is the responsibility of purchasers to conduct their own tests to determine the suitability of our products for their specific purposes.

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