Solstice

HYDROBLOCK® SOLAR









ULTRA-HIGH BARRIER PROTECTION FOR LONG-LASTING SOLAR PERFORMANCE

The global shift to clean energy is accelerating the adoption of next-generation, flexible photovoltaic (PV) and building integrated photovoltaic (BIPV) technologies. Unlike conventional rigid glass-framed modules, these formats are lightweight, conformable and designed to be embedded directly into architectural surfaces across commercial, residential and infrastructure projects.

As form factors become more sophisticated, ensuring their long-term protection is imperative. Why? Flexible PV and BIPV modules are used in harsh and demanding real-world environments: rooftops, facades and structures exposed to humidity, rain, UV radiation, thermal cycling and mechanical stress. Without protection from a high barrier front sheet, moisture ingress and UV degradation can steadily – and often unknowingly – erode performance.

Flexible PV and BIPV manufacturers want advanced barrier films that provide ultra-high moisture resistance, UV stability, optical transparency, mechanical durability and fire safety – all while meeting increasingly demanding supply chain, cost and compliance requirements.



HYDROBLOCK® SOLAR

Part of Solstice Advanced Materials' popular and proven solar materials portfolio, Hydroblock Solar is engineered with an ultra-high moisture and oxygen barrier to help reduce degradation and support long-term module performance. Optically clear, chemically inert and UV transparent, it delivers exceptional moisture barrier performance across all climatic zones.

Engineered for the demands of flexible PV and BIPV manufacturing, HydroBlock Solar is available in different thicknesses and configurations to meet the capabilities and demands of customers. In addition, it is FEOC-compliant for those customers requiring it.



Moreover, damp heat testing (at 85°C/85% RH for 3,000 hours) of Hydroblock Solar modules by Solstice reveals significantly lower degradation rates than traditional ETFE modules – a significant competitive advantage.

HydroBlock Solar is suitable for flexible PV modules in applications ranging from consumer electronics and wearables to low-earth satellites, marine craft and recreational vehicles; and for BIPV modules integrated into the roofs, facades and glazing of residential and commercial buildings.

TECHNICAL HIGHLIGHTS

- **Ultra-high moisture barrier** • Offers strong WVTR performance across all climatic zones, from tropical to arid environments.
- **UV stable and chemically inert** • Maintains transmission long term without photodegradation.
- **Uniform matte finish** • Aesthetically refined single or double-sided matte finish designed for architectural flexible PV and BIPV applications requiring a matte finish.
- **Optional non-matte finish** available to meet customer aesthetic requirements.
- **Wide temperature tolerance** • Stable across a wide range of temperatures. Performs reliably whether in a cold-climate installation or a hot rooftop environment.
- **Substrate and encapsulant compatibility** • Compatible a wide array of leading substrates and most encapsulants for seamless integration into module manufacturing processes.
- **Oxygen barrier** • Prevents oxidative degradation to preserve cell integrity and maintain module efficiency over operational lifespans.
- **Optically transparent** • Enables sunlight to reach the photovoltaic layer.
- **Fire and flame resistant** • Exceptionally high limiting oxygen index (LOI) does not support flame, indicating high fire safety.
- **Conformable and anti-slip** • Flexibility supports complex module geometries. Anti-slip surface ensures safe handling during manufacturing.
- **Offered in various gauges** • Multiple gauges are available to match different barrier requirements.
- **UL Yellow card listed** • globally recognized as the safe and reliable choice for flexible PV modules.

KEY BENEFITS

HydroBlock Solar is engineered for flexible PV and BIPV manufacturers who require more from a barrier film, including higher performance, reduced degradation and an extended lifespan. Benefits include:

- Decreases moisture-related degradation and increases the operational lifespan of modules.
- Extends module lifespan, reducing energy costs and improving long-term value.
- Advanced extrusion technology delivers manufacturing consistency, process reliability and operational efficiency.
- Fire resistant and anti-slip, in line with current building safety standards.
- U.S.-based supply chain reduces lead times, supply risk and logistical complexity.
- FEOC-compliant. Manufactured in the USA.





To learn more about how HydroBlock Solar ultra-high barrier films can support your application requirements, contact us or visit https://www.solstice.com/us/en/products/industrial-films/hydroblock

THE SOLSTICE ADVANTAGE

When you specify HydroBlock Solar, you also gain access to the resources of a customer-centric organization dedicated to supporting every stage of a PV module manufacturers' product development journey.

Here are some of the ways you can benefit from Solstice expertise:

SALES	Our commercial team delivers responsive, expert support for your application requirements.
TECHNOLOGY AND ENGINEERING	Solstice technical specialists can work alongside your team to troubleshoot, co-develop specifications and resolve integration challenges.
ANALYTICAL LABORATORY	You can access a fully functional analytical laboratory equipped with state-of-the-art testing capabilities.
REGULATORY AND COMPLIANCE	Solstice's government relations and stewardship team can guide you through compliance matters such as meeting FEOC and chemical requirements.
MARKET DEVELOPMENT TEAMS	Solstice market development managers are on standby to support your business development and pipeline generation initiatives.
SUSTAINABILITY	We have teams focused on sustainability and end-of-life schemes for PV modules that can help you meet your ESG commitments and circular economy goals.

For More Information Visit
solstice.com

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