

TopScreen™

Barrier Coatings for Cupstock

Designed to meet the demand for plastic-free, recyclable and repulpable, single-use hot and cold beverage, and ice cream cups



Solenis is the partner of choice for leading food and beverage paper packaging producers. In addition to offering the broadest range of papermaking additives in the industry, we offer an innovative portfolio of environmentally friendly barrier coatings for food packaging applications. These food contact barrier coatings not only enable papermakers to develop paper-based alternatives to plastic packaging but also, in many cases, to meet their sustainability goals.

Technology Overview

TopScreen™ coatings for cupstock provide a versatile toolkit, allowing manufacturers to produce the next generation of cupstock with a superior liquid barrier without the use of polyethylene (PE) film.

The technology is easy-to-use, does not require specialized coating application equipment and uses conventional cup-forming equipment for the conversion process. TopScreen™ barrier coatings are recyclable, repulpable and an environmentally friendly alternative for PE laminated board.



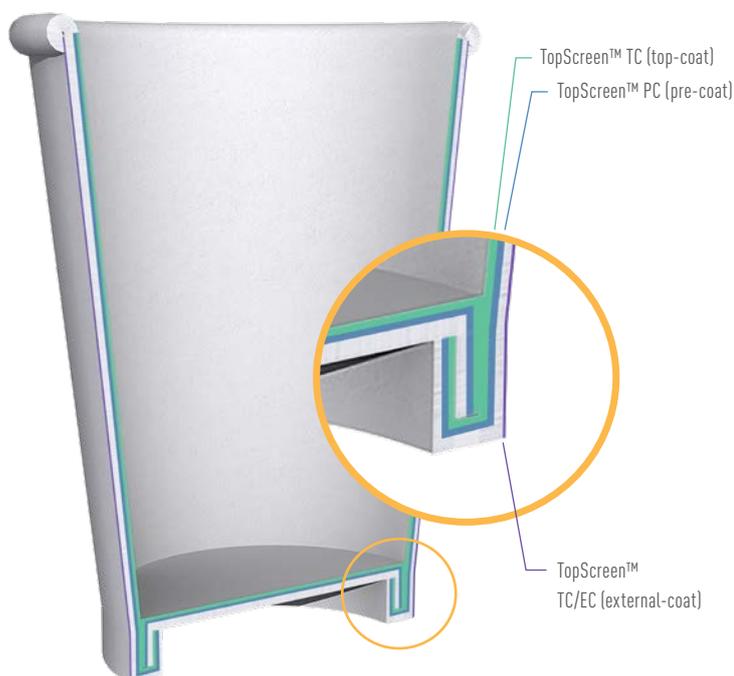
Award-Winning Innovation

In 2019, Solenis was selected as one of 12 winners in the NextGen Cup Challenge, a global innovation competition backed by giants of the food-service industry to develop a widely recyclable and/or compostable fiber to-go cup. Solenis received the award in the Innovative Cup Liners category for its TopScreen™ barrier coatings technology.



Technology Description

TopScreen™ consists of two layers: a precoating and top coating. The precoating provides coating holdout and improves the receptivity for the topcoat on the paper substrate. The top coating provides the required properties to the coated paper. A combination of both provides a barrier to hot and cold liquids, and ice cream. Furthermore, the heat-seal properties of the coating enable the user to convert the coated paper with the help of standard cup converting applications, both hot-air and ultrasonic.



Technology Application

TopScreen™ cupstock barrier coatings provide an effective water barrier for cup stock paper that can be converted into a variety of paper cup and food containers. These waterborne dispersions can be applied using conventional coating application processes, including metered size presses, film, rod, air knife and curtain coaters, and gravure and flexographic presses. TopScreen™ barrier coatings for cupstock are ideal for many applications, including cups for hot and cold drinks, ice cream or other quick-serve items. They are also suitable for printing. Coated paper cups can display typography, logos and other graphics.

Regulatory Compliance

TopScreen™ products comply with regulatory and standard frameworks: BfR XXXVI (Germany), EU 1935/ 2004 (Europe), FDA 21 CFR § 176.170 (USA) and FDA 21 CFR § 176.180 (US). For more detailed information, refer to specific Regulatory Data Sheets.

Sustainability

- TopScreen™ is recyclable and repulpable; post-consumer cups can be used to produce new cups or other paper-based packaging products.
- TopScreen™ is compostable to an extent, with many products capable of meeting the harmonized European standard EN 13432.

Critical Parameters for Water-based Barrier Coatings

Parameter	Key Considerations	Implications
Formulation	Anti-blocking Cost Raw materials Processability Sealability Shelf-life Stability Viscosity	Cup making Shipment, storage Coating weight uniformity Competitiveness
Cup Stock Paper	Paper substrate Surface roughness Surface starch	Plybond Coating weight, pre-coat Sealability, blocking
Coating Weight	Coating weight control Double-side coating Single-side coating Precoating	Cost, repulpability Sealing, blocking (on the roll)
Coating	Air knife Blade Curtain Rod	Coating weight uniformity Sealability, blocking
Drying	Drying equipment Temperature Time	Blocking, deposits
Transportation and Storage	Temperature Time	Blocking
Cup Production	High speed Hot air mechanical Hot air servo Low speed Medium speed Ultrasonic	Sealability Productivity Cost Printability
Shipment and Storage	Temperature	De-nesting



More Information

For more information about TopScreen™ barrier coatings for cupstock, please contact your local Solenis sales representative or visit us online at [Solenis.com/foodpack](https://www.solenis.com/foodpack).



Advanced solutions for your toughest challenges.

Solenis is a global leader in specialty chemicals for water-intensive industries. With an average of 20 years expertise, our team is the industry's most knowledgeable. That's how we solve your toughest operational and sustainability challenges—whether you're in the pulp, paper, oil and gas, petroleum refining, chemical processing, mining, biorefining, power or municipal market. Combining the right people, the right experience and the right technology, we're built to deliver value.



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