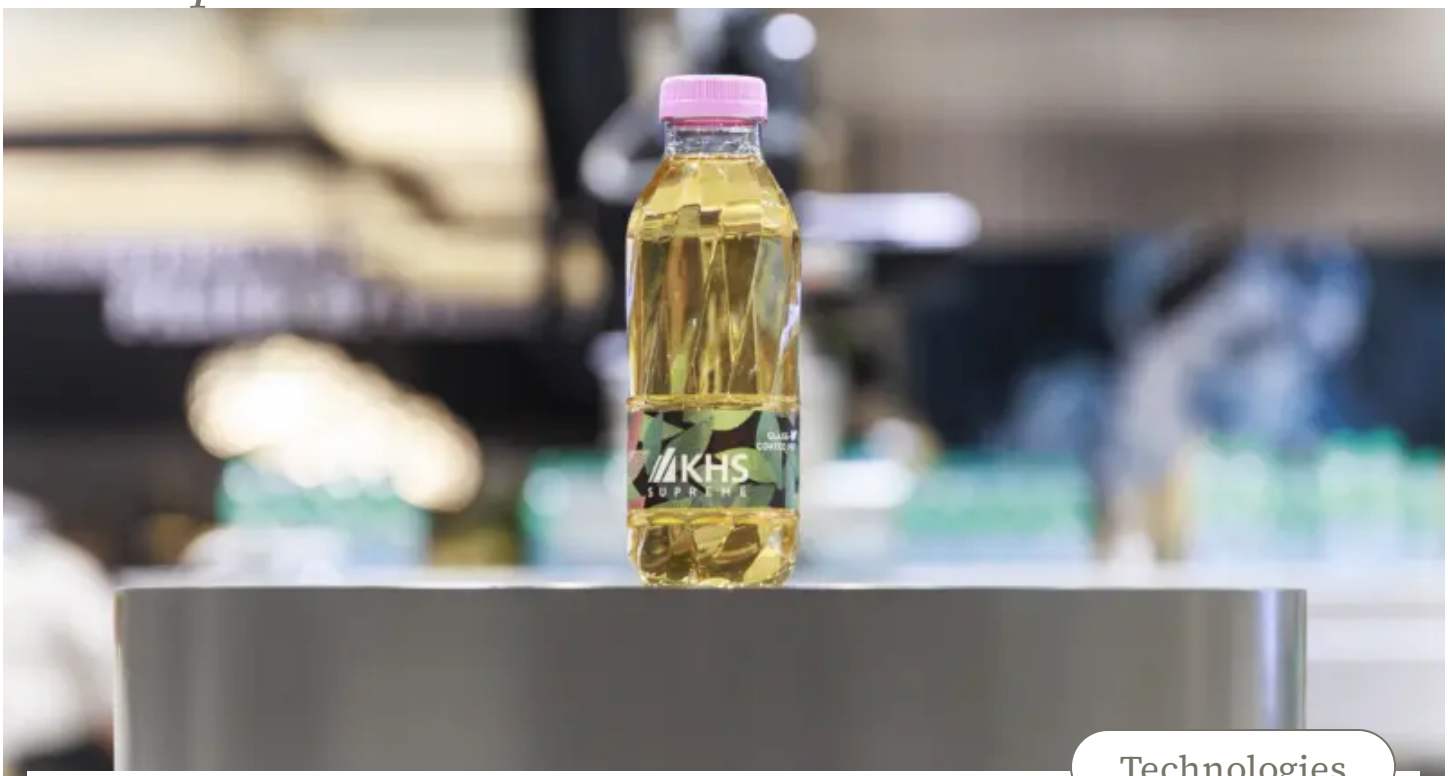

Technologies

KHS SUPREME FOR SENSITIVE BEVERAGES

Crystal clear benefits

3/26/2026, 2 minutes reading time

With the KHS SUPREME PET bottle, KHS is taking protection of oxygen-sensitive beverages up to the next level. The innovative system for aseptic filling combines the benefits of glass with the handleability of PET by applying proven Plasmax barrier technology.

NON-RETURNABLE PET RETURNABLE PET

PHOTOGRAPHY / ILLUSTRATION

Frank Reinhold, Joerg Schwalfenberg

COVER PHOTO

The KHS SUPREME PET bottle combines high-quality design with the product-protective properties of glass bottles.

KHS presents the result of an extensive development study: with the KHS SUPREME PET bottle, the Dortmund turnkey supplier is turning its attention to the product protection of oxygen-sensitive beverages such as tea. Here, besides providing high-quality design, KHS chiefly makes use of its tried-and-tested Plasmax barrier technology, a wafer-thin, transparent layer of silicon oxide that coats the inside wall of PET bottles like glass. Less than 100 nanometers thick, this reliably protects sensitive beverages from oxidation, retaining their taste, color and quality for lengthy periods of time. This means that products also keep up to ten times longer.

Plasmax technology, that's been in successful use for over 20 years, is being constantly evolved by KHS at its ↗ **PET competence center** in Hamburg in the north of Germany. The team's pooled expertise is directly incorporated into every single innovation to support customers worldwide with the development of pioneering packaging systems.

↑
KHS SUPREME provides maximum product protection for quality-sensitive beverages thanks to innovative Plasmax barrier technology.

Protection for quality-sensitive beverages

“Our barrier system is ideal for premium products such as green tea. This particularly quality-sensitive beverage has to satisfy the highest requirements on markets in Asia, for example,” explains Philipp Langhammer, product manager for barrier technology at KHS. Tea oxidizes easily, leading to unwanted changes in color and taste. The glass barrier prevents this, making for longer shelf lives, freshness and safety.

Up to 60,000 bottles per hour

This technology, originally developed for pharmaceutical glass containers, is based on many years of research and process optimization. The first Plasmax systems were piloted in the food sector back in the early 2000s. Since then, KHS has continuously optimized the Plasmax barrier. It was recently scaled up to industrial production speeds of up to 60,000 bottles per hour – without any detriment to its protective properties.

“Our barrier technology combines all the benefits: optimum product protection and complete circularity.”

Philipp Langhammer
Barrier technology product manager at KHS.

100% rPET-compatible

Besides providing technical precision, Plasmax technology also scores with its environmental friendliness. One definitive benefit is its full recyclability: in the recycling process, the

glass coating is simply washed off with caustic – without impacting the quality of the material. Unlike chemical scavenger technologies that make recycling more difficult, the purity of the separated PET is maintained. What's more, the coating is fully compatible with 100% rPET: this means that it can both be recycled and is suitable for use with recycled PET. "We thus refer to this as a fully circular barrier technology," says Langhammer. "It combines all the benefits: optimum product protection and complete circularity."

Any further questions?

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