

## Case history

# A Sustainable Solution for Venting Detergent Containers

## Situation

Miele is a German manufacturer of washing machines and other appliances backed by its “Forever Better” brand promise. With the release of TwinDos, Miele’s new dispensing system, users can save up to 30 % in detergent consumption. TwinDos significantly reduces the amount of chemicals and surfactants entering wastewater systems, while actually improving the cleanliness of the laundry. To ensure the laundry experience is more effective and convenient for the customer – and more environmentally sustainable for everyone – Miele teamed up with Gore to incorporate GORE® Packing Vents into its new, innovative system.



## Challenge

TwinDos doses detergents automatically and perfectly. The consumer inserts the detergent containers, and the machine will run for 27 loads without needing further detergent refills. Miele realized that for TwinDos to succeed, it must perform with precision and reliability every time.

Miele’s laundry systems operate sustainably due to control systems that monitor and optimize water, energy and detergent use, but that sustainability hinges on adequate ventilation.

“It was critical to effectively vent the dispensing containers,” said Miele product manager Maria-Paz Linaje. “This is due to the challenges inherent in the laundry environment itself.”

Today’s more effective cleaning agents use more concentrated, sustainable formulations. But these products, especially bleaches and stain removers, create significant off-gassing that causes pressure build-ups within the dosing container. Vast temperature swings – as loads switch between hot and cold washes – can also cause pressure differentials. These types of pressure imbalances must be quickly equalized, or they’ll cause the dispensing containers to deform and potentially leak.

Miele needed a partner who understood these application needs and could provide a successful venting solution.

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“We knew that venting our laundry dispensing containers was the key to maintaining Miele’s premium-level precision, performance and efficiency over time ... [and] that Gore had the venting technology and expertise to deliver the optimal solution for our application.”

Maria-Paz Linaje  
Product Manager, Miele

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Gore's expertise yielded a prompt and effective solution to the challenges Miele faced.

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## Solution

Gore has developed many venting technologies that maintain packaging integrity for household and industrial chemicals and cleaners. By partnering with GORE® Packaging Vents, Miele added convenience, precision and efficiency to the TwinDos system. Gore's expertise yielded a prompt and effective solution to the challenges Miele faced: the GORE® Packaging Vent D15. The vents' continuous bidirectional airflow rapidly equalized pressures, even when tested under the most rigorous conditions. With its press-fit construction, the vent was easily integrated into Miele's automated manufacturing process and provided a highly reliable seal to the dosing container. With the vent in place, there was no chance of the cleaning agents leaking out.

Additionally, the vents' GORE™ Membrane reliably protects the containers against ingress of liquids and other contaminants, including the dust and lint that are part of every home laundry environment.

GORE® Packaging Vents offer a practical solution in keeping with Miele's "Forever Better" promise. The TwinDos system is designed for environmental sustainability; together, Miele and Gore created a sustainable solution of their own.

## Superior Breathability to Maintain Container Integrity

GORE® Packaging Vents provide high protection for containers of agricultural, industrial, and household chemicals and cleaners. Engineered for high performance despite changing altitudes and temperatures, GORE® Packaging Vents:

- allow air and gas molecules to pass through a highly breathable ePTFE membrane
- continually equalize pressure so containers won't bulge or collapse
- maintain airflow even after contact with high-viscous or low surface-tension liquids
- prevent leakages and provide a barrier to environmental dust and dirt

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