



Packaging Vents

*CAP LINERS FOR AGRICULTURAL AND HOUSEHOLD
CHEMICAL CONTAINERS*

Reliable vented
container solutions
from Gore





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New Aggressive Chemicals Require Maximum Airflow After Liquid Contact

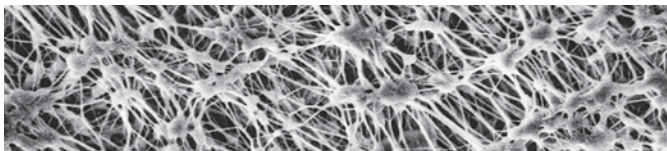
Agricultural and household chemical manufacturers continue to develop new formulations to improve market share and to differentiate their product lines. These changes often result in off-gassing and oxygen scavenging in the container. In addition, as products are shipped throughout the world, they encounter challenges caused by rapid fluctuations in temperature and altitude. The result is packaging that leaks, collapses or bloats — all of which compromise brand integrity.

GORE® Packaging Vents continue to maintain high airflow even after contact with some of the most aggressive and highly concentrated chemical formulations. The proprietary ePTFE membrane in these vents eliminates bloating and collapsing of containers by allowing them to breathe without leaking.



THE SOLUTION FOR YOUR APPLICATION

GORE® Packaging Vents offer the ideal combination of durable liquid resistance and excellent airflow through the use of Gore's unique expanded polytetrafluoroethylene (ePTFE). This proprietary membrane allows gases to be released, both inside and outside the container, while preventing liquids from leaking out and contaminants from entering. It prevents liquid penetration, while allowing airflow and equalizing pressure. When splashed by a viscous liquid, the oleophobic membrane quickly recovers its venting capability.



Gore's expanded PTFE membrane magnified 40,000 times.

At Gore, our global engineering teams work with you to ensure maximum reliability for your container. We offer more than a venting product; with multiple testing facilities globally, we deliver a total venting solution, including rigorous analysis of your container's performance.



REALIZE THE BENEFITS

- Improved container integrity due to elimination of bloating or collapsing
- Decreased operating costs with thin-walled, lightweight packaging
- Increased design flexibility with wide array of sizes and constructions to match existing tooling and various chemical concentrations
- Reliable airflow even after liquid contact
- Improved safety throughout the life of the container, minimizing accidents, spills and label damage
- Drop-in replacement with no design change to existing cap or manufacturing equipment
- Improved production efficiency because containers can be filled with hot liquids



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3FL — FULL FACE FOAM ePTFE CAP LINER

Easy installation like traditional foam liner
Available in various slit widths to accommodate multi-up layouts
Vent dual-chamber bottles with ease



Liner Characteristics	Oleophobic		Advanced Oleophobic ^c
Repeatable sealing in use ^a	Reseals		
Typical airflow per cm ² at 12 mbar ^b	0.30 l/h		0.29 l/h
Minimum water entry pressure ^b	> 1.0 bar		
Typical thickness	1.0 mm	2.0 mm	1.0 mm
Part number for hole-in-cap venting	3FL-323	—	3FL-363
Part number for cap-thread venting	3FL-353	3FL-354	3FL-373
Typical applications	Laundry detergents, household cleaners and disinfectants, surfactants, solvents, oils		The most aggressive, highly concentrated and viscous formulations, e.g., toilet and drain cleaners, stain removers, organic fertilizers

INDUCTION LINERS

Tamper-evidence capability
Registered implementation required
Available in multi-up or one-up layouts



Liner Characteristics	Pulp Induction	Optimized Pulp Induction
ePTFE membrane	Oleophobic	
Liner construction	2-piece	
Venting method	Cap thread (No hole required in cap)	
Typical airflow at 12 mbar ^b	0.24 l/h	0.12 l/h
Minimum water entry pressure	> 0.5 bar	
Typical thickness	1.0 mm	
Part number for HDPE bottles ^d	CM6CA017	CM6BA017
Part number for PET bottles ^d	CM6CA023	—
Typical applications	Organic and inorganic fertilizers, some pesticides	Pesticides requiring Moisture Vapor Transfer Rate (MVTR) control

^a Resealability of the container depends on proper cap design, bottle design and assembly.

^b Airflow after liquid exposure and resistance to liquid penetration varies by application.

^c Oleophobic liners provide superior roll-off for more challenging fluids.

^d Part number varies with liner, layout and vent diameter.



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GLOBAL COLLABORATION AND EXPERT TECHNICAL SUPPORT CAPABILITIES

At Gore, we take pride in collaborating with innovative design teams at leading industrial and household chemical companies. We work diligently to provide proven, practical solutions to packaging challenges.

Our expert engineers seek to identify and understand your unique packaging and brand requirements. A key component of our product development process is a concept we call fitness for use, which means delivering the best product to meet the demands of a specific application. With state-of-the-art test facilities in Putzbrunn, Germany, Shenzhen, China, and Maryland, United States, we rigorously analyze your container's performance to ensure long-lasting reliability in the most challenging environments. We recommend the best venting solutions and work with your global business partners to drive your innovative products to completion.



CONTACT GORE TO LEARN ABOUT THE RIGHT GORE® PACKAGING VENT FOR YOUR UNIQUE APPLICATION

INTERNATIONAL CONTACTS

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