



SAATlvent

PFAS-Free Venting Membrane For Pressure Equalization, Moisture Control, and Contaminant Protection

FOR THE MANY, BY THE FEW

—SAATI

PFAS-Free Priority

For People and Planet

In response to increasing environmental and regulatory demands, SAATI has developed a full range of venting membranes that combine technical performance with responsible material choices.

All **SAATlvent®** membranes are completely PFAS-free.*

Per- and polyfluoroalkyl substances (PFAS) are widely used in traditional membrane technologies for their water-repellent properties. However, their persistence in the environment and potential health impacts have led to growing regulatory restrictions worldwide. By eliminating PFAS from its membranes, SAATI offers a safer, more sustainable alternative, without sacrificing reliability or protection.

Safe Materials, Safer Manufacturing

SAATlvent membranes are made using selected polymers and solvents that minimize environmental and health risks. From formulation to final product, the entire process is designed to reduce hazardous emissions, ensure operator safety during production, and support safer handling by customers and end users.

For engineers and product developers, this means one fewer trade-off: high-performance membrane solution that aligns with sustainability goals and regulatory compliance — today and tomorrow.

Highlights

- **PFAS-free across all membrane types**
- Use of low-impact raw materials and solvents
- Safer for operators, assemblers, and end users
- Aligned with RoHS, REACH and upcoming global restrictions

* PFAS FREE means no PFAS substances are intentionally added or declared in its components. However, trace amounts may be present due to unintentional contamination or background environment exposure.

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FOR THE MANY, BY THE FEW

Why Venting Membranes Matter

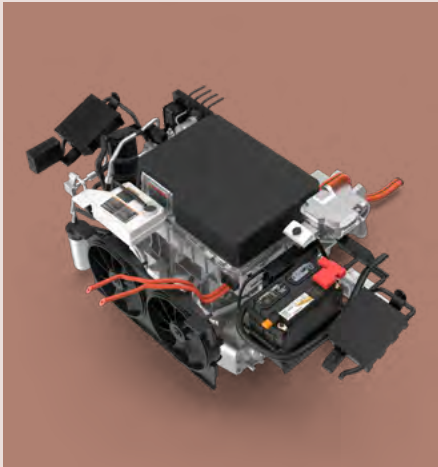
Critical Protection for Sensitive Electronics

SAATI's expertise in technical fabrics for filtration has laid the foundation for the development of membrane technologies. This evolution responds to specific application needs where woven materials reach their limits, such as finer pore control, barrier performance, and integration into sealed devices.

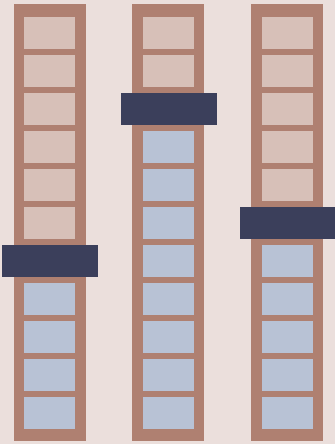
Venting membranes complement SAATI's portfolio by extending its core competencies into new formats and performance levels. Fully integrated into existing production processes, they offer reliable, scalable solutions for modern electronic and industrial applications.

Designed to allow air exchange while blocking water, dust, and particles, they are vital for:

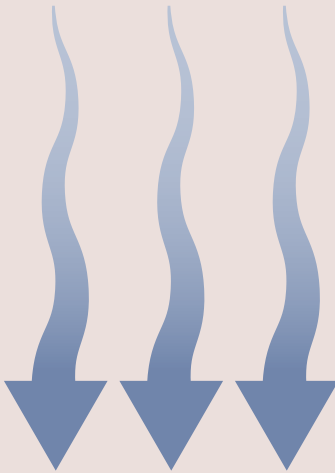
- Automotive electronics (sensors, ECUs, lighting systems)
- Consumer electronics (smartphones, speakers, wearables)
- Industrial enclosures (power systems, packaging)



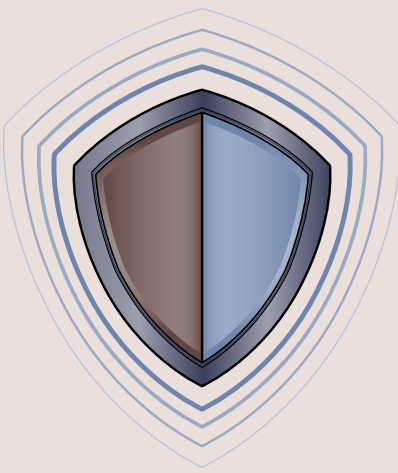
Key Functional Benefits



Pressure Equalization:
Compensates for pressure changes caused by temperature shifts or altitude



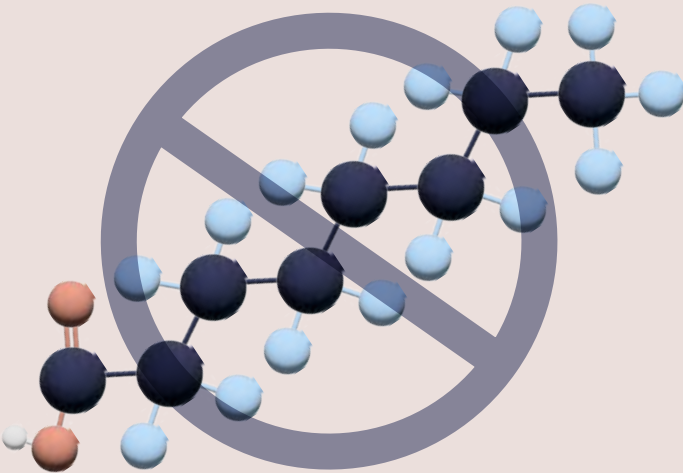
Condensation Prevention:
Prevents internal condensation that could corrode or short sensitive components



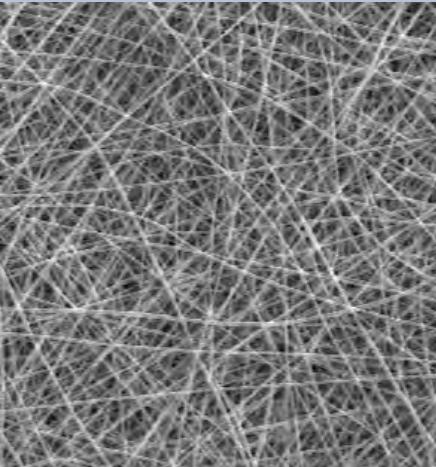
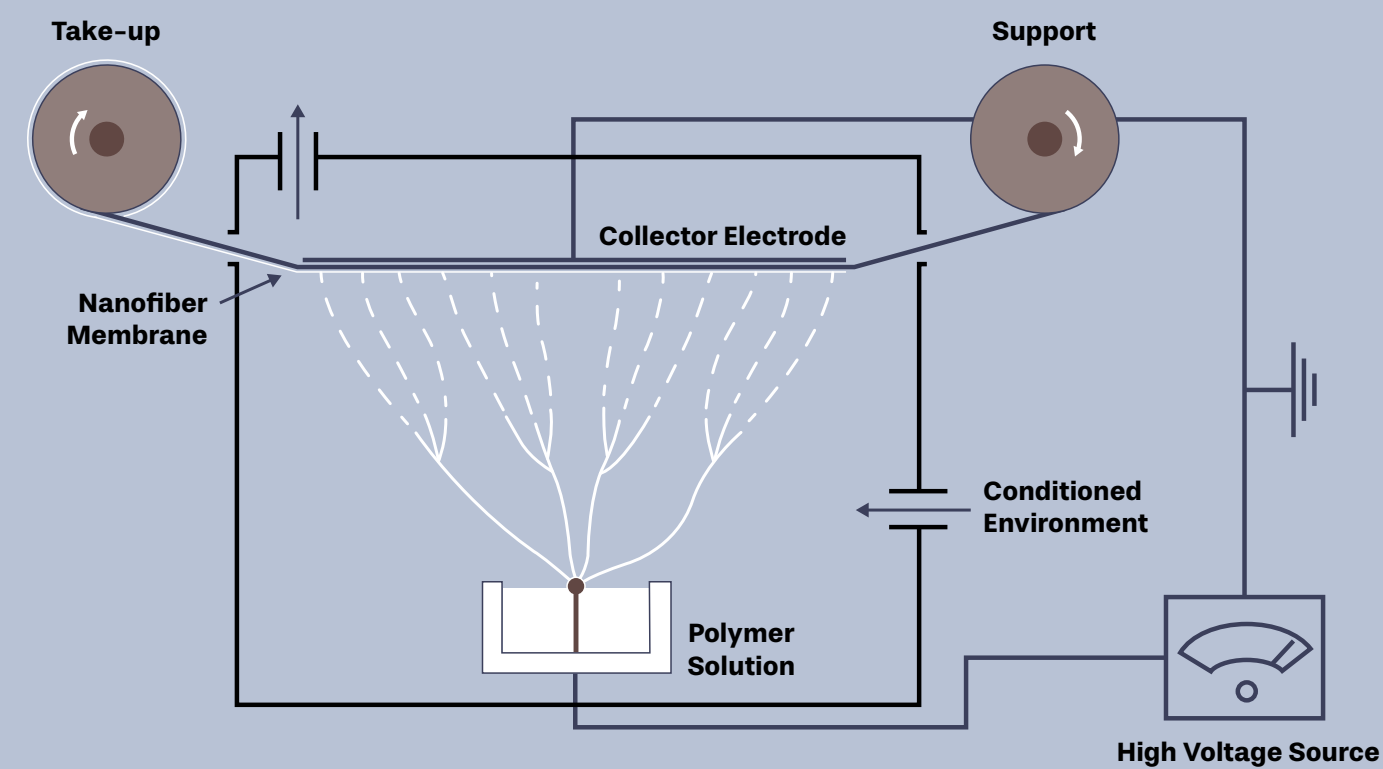
Contaminant Protection:
Repels water, fluids, dirt, and fine particulates

PFAS-Free

All SAATivent solutions are manufactured PFAS-free and tailored for durability, acoustic performance, and environmental resilience.



Electrospinning

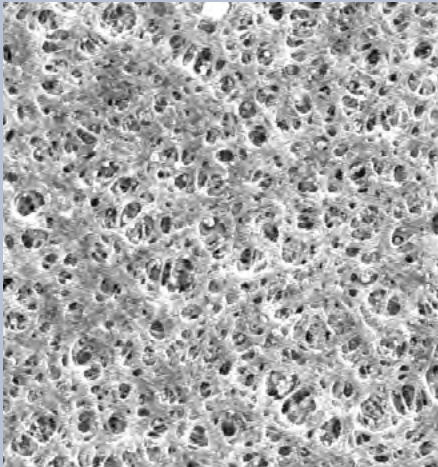
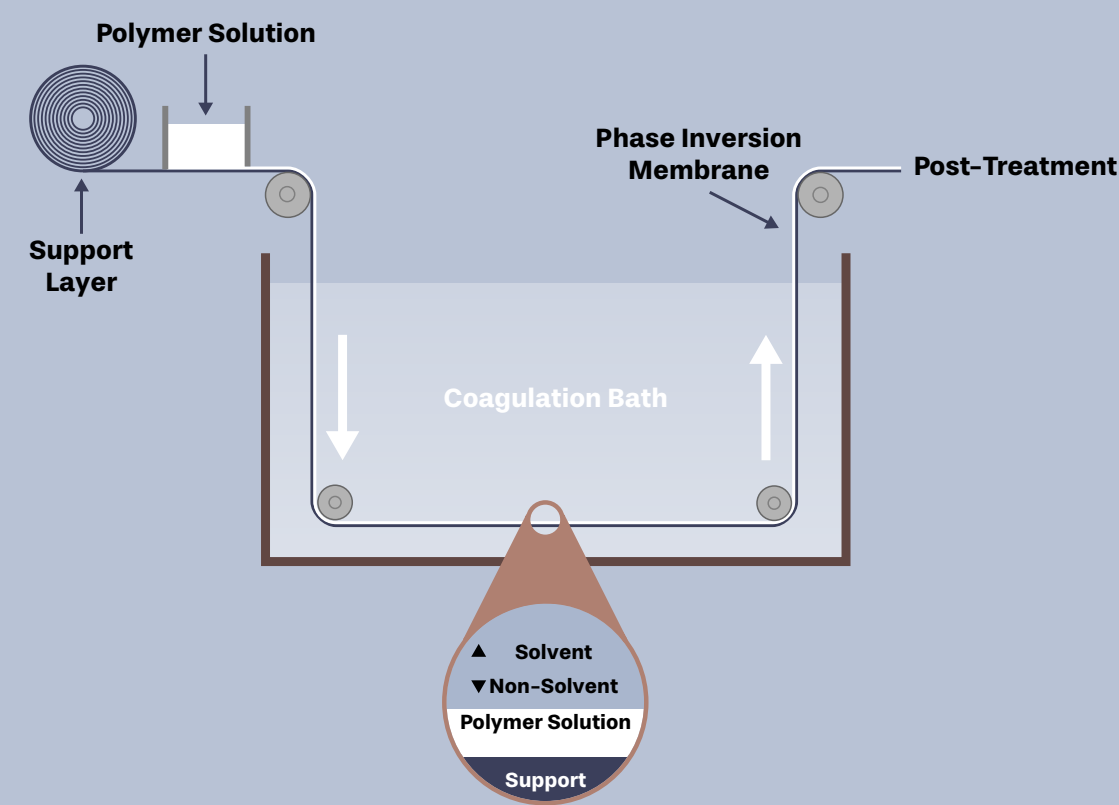


Electrospinning is a process where a polymer solution is exposed to a high-voltage electric field, producing ultra-fine fibers that are deposited onto a carrier. As the fibers accumulate, they form a self-standing, breathable membrane.

The result is a uniform structure with:

- High porosity and breathability
- Tunable pore size distribution
- Excellent acoustic properties

Phase Inversion



Phase inversion is a process where a polymer solution is cast as a thin film onto a support and then exposed to a non-solvent, triggering a controlled transformation into a solid but porous structure.

The result is a composite membrane with:

- Tighter structure with excellent liquid repellency
- Greater mechanical strength
- Controlled pore morphology

SAATIVENT

**Four lines.
One brand.
No limits.**

SAATlvent NM Series

Designed for acoustic applications in consumer electronics, combining optimal sound transmission with robust environmental protection.

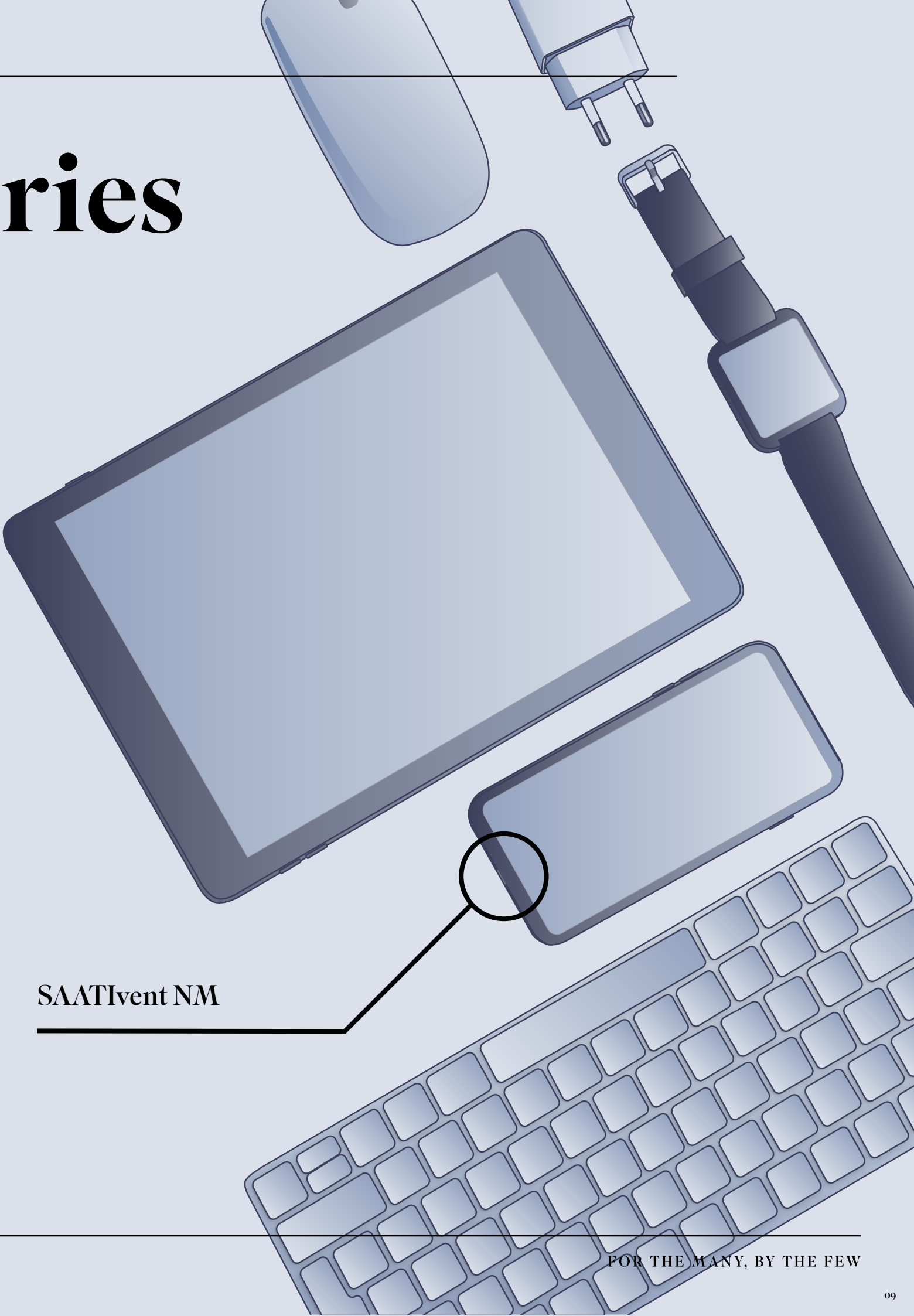
Engineered for microphones and other audio devices, these membranes offer minimal acoustic loss while ensuring reliable IP67/IP68 protection.

Key Benefits

- Superior Acoustic Transparency
- Reliable Environmental Protection
- Optimized for Compact Designs
- PFAS-Free Sustainable Solution
- Efficient Manufacturing Integration

SAATlvent NM Series			
Product	NM2300HF	NM2700HF	NM3800HF
Min Air Permeability L/cm²h (@ 70 mbar)	5	15	35
dB Loss up to 10KHz*	≤1.5	≤1.0	≤0.5
Thickness	9	6	3
Hydrophobic	YES	YES	YES
Part Level IP Rating	IP67/IP68		

*Part size 1.6 x 1.6mm



SAATlvent NM

SAATlvent PR Series

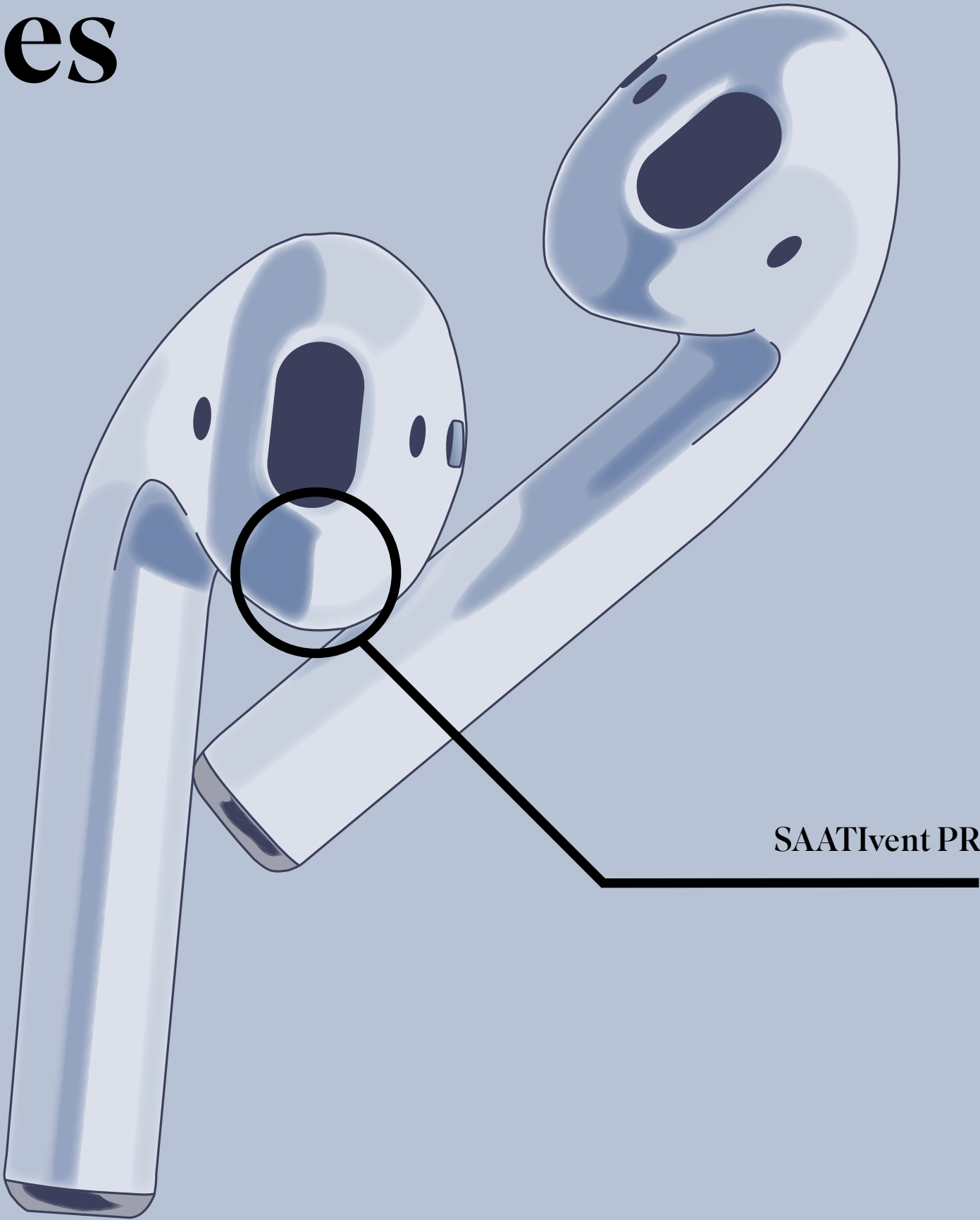
Designed for pressure equalization in compact consumer electronics, combining airflow efficiency with robust environmental protection.

Ideal for components inside smartphones, smartwatches and portable devices, SAATlvent PR membranes ensure consistent venting performance by balancing internal pressure while blocking water, dust, and particles — all in a formulation that is PFAS-free. Additionally, they are suitable for speaker back venting applications, providing effective pressure equalization and environmental protection

Key Benefits

- Effective pressure equalization
- IP-grade barrier to fluids and particulates
- Designed for compact electronic enclosures
- PFAS-free and environmentally conscious
- Seamless integration into automated processes

SAATlvent PR Series	
Product	PR04HF
Min Air Permeability L/cm²h (@ 70 mbar)	400
Thickness (µm)	80
Hydrophobic	YES
Part Level IP Rating	IP67/IP68



SAATlvent M Series

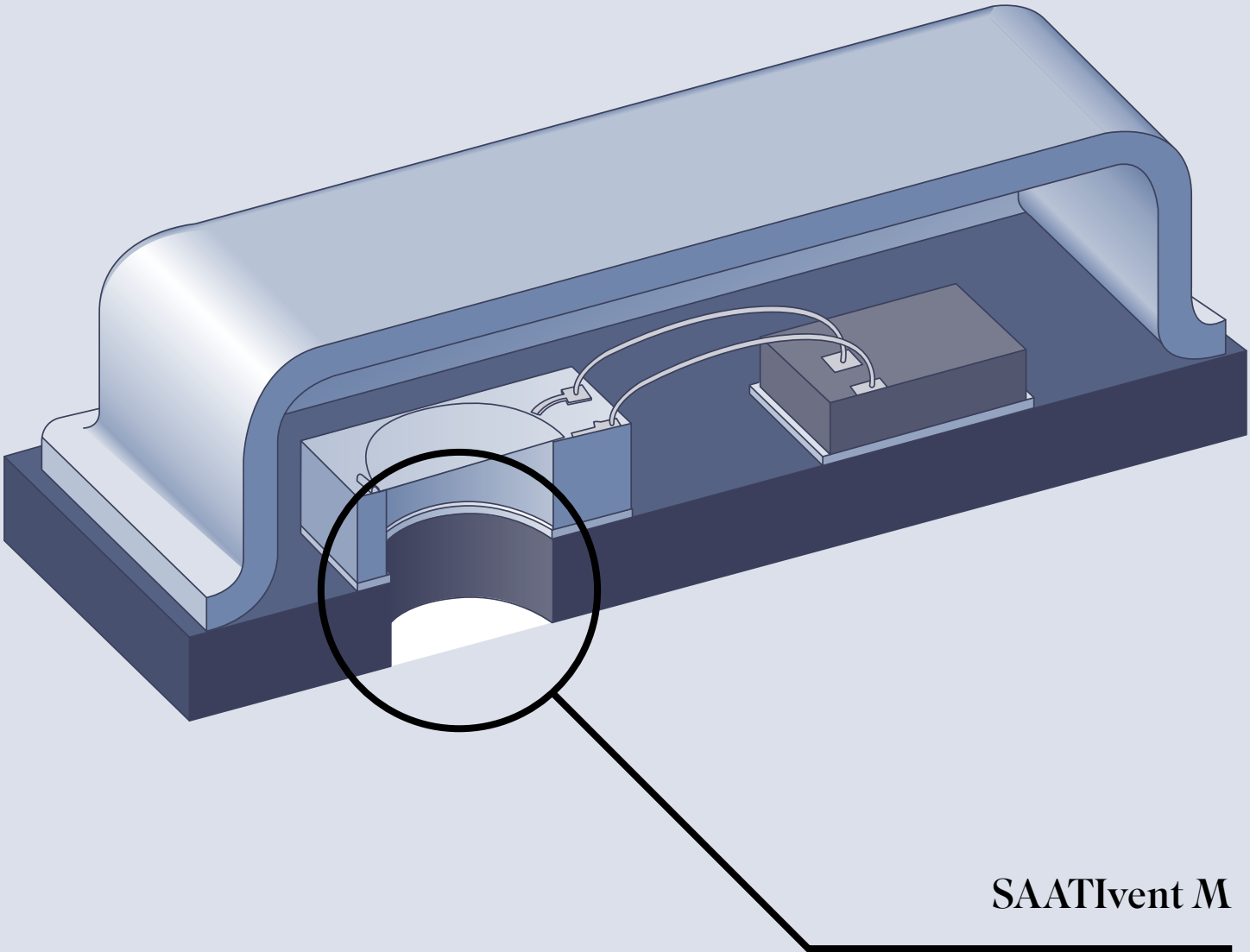
Designed for MEMS microphones and sensors, offering durable protection in high-precision electronic and automotive applications.

SAATlvent M membranes shield sensitive components from dust, moisture, and thermal stress, ensuring long-term reliability in demanding environments such as automotive systems and advanced electronics. It withstands JEDEC reflow cycles and extreme operating conditions, ensuring durability throughout manufacturing process.

Key Benefits

- Reliable barrier against contaminants
- Resistant to high operating temperatures
- Simplified integration into sensor housings
- Optimized for automotive and industrial-grade electronics
- PFAS-free

SAATlvent M Series	
Product	M05HF
Min Air Permeability L/cm²h (@ 70 mbar)	400
Thickness (µm)	80
JEDEC Reflow Profile	Compatible
Hydrophobic	YES
Part Level IP Rating	IP67/IP68



SAATlvent APR Series

Engineered for advanced industrial & automotive electronics, enabling pressure equalization, thermal management, and contaminant protection in harsh environments.

Ideal for electric, hybrid, and traditional equipment, devices & vehicles, SAATlvent APR membranes support reliable venting in ECUs, sensors, and lighting, maintaining durability under thermal and chemical stress. Fully PFAS-free and regulation-compliant.

Key Benefits

- Rapid pressure equalization
- Effective thermal management
- High protection against fluids and particulates
- Compatible with Snapfit & Screwvent assemblies
- PFAS-free and compliant with automotive standards

SAATlvent APR Series				
Product	APR05HF	APR20HF	APR45HF	APR20HF XT
Min Air Permeability L/cm²h (@ 70 mbar)	5	15	35	15
Thickness (µm)	90			85
Max Temperature (°C)	120	120	120	280
Part Level IP Rating	IP67 / IP68 / IR69K*			

* IR69K achievable under specific conditions

SAATlvent APR

Choosing The Right Membrane Starts With A Conversation

Technical Dialogue. Tailored Solutions.
Reliable Integration.

Selecting a venting membrane is not only a material decision. It is a design choice that affects reliability, integration, and long-term performance.

SAATI supports engineering and product development teams in identifying the most suitable membrane solution for their specific application, providing:

- Support in material selection based on acoustic, thermal, or barrier requirements
- Guidance on integration options (laminates, adhesives, die-cut parts)
- Custom configurations and prototyping when needed
- Full compliance with PFAS-free regulations, RoHS, and REACH

To evaluate a membrane, discuss technical needs, or to request documentation, SAATI's team is available to assist.



SAATI produces many products for all types of markets that find their way into the daily life of billions of people. We are leaders in both process and microfiltration, screen printing, and personal and vehicular multi-threat protection products.

Over Ninety Years of Innovative Action

SAATI is a multinational group with corporate headquarters that have been situated in northern Italy since 1935. Today SAATI is a leading force in the development, manufacturing and commercialization of high tech filter media & chemicals.

SAATI's passion and creativity are the foundation for an unsurpassed tradition of continuous innovation in the filtration markets. This endless pursuit is what drives SAATI's dedicated customer-centric R&D to functionalize products beyond simple filtration.

The offering includes a broad range of synthetic fabrics and fabricated components — available in Polyester, Nylon, Polypropylene, PPS, and PEEK — engineered to ensure dimensional stability, mechanical strength, and cleanliness across narrow micron tolerances (7 to 3,000 µm). These materials are designed for consistent performance in demanding filtration environments.

In parallel, SAATI designs and produces functional venting membranes for pressure equalization, combining air permeability and liquid repellency to protect sensitive devices and systems. Tailored polymer formulations and precision processes ensure each membrane delivers reliable and application-specific performance.

Perfecting the Art of Precision Filter Media

With over 1,000 employees spread across multiple facilities worldwide, and a strong established track record in innovation and manufacturing excellence, SAATI's mission is to improve the life of every person every day – through working with both customers and partners to create a safer, healthier and cleaner world.

To guarantee product reliability, SAATI constantly runs tests and has all of the strictest and most up to date certifications that validate the consistency, performance, quality and characteristics of each item.

Specific SAATI fabrics are tested and certified in accordance with USP CLASS VI/ISO 10993 Regulations, and these fabrics are inspected and transformed into customized shapes in Class 10,000/ISO Class 7 Clean Rooms in accordance with UNI ISO 9001 regulations.



Customer Driven Innovation

Thanks to a direct presence in many countries, it is easy for customers to reach out, wherever they are located, and the response is always prompt. SAATI staff has a high level of technical expertise and dedication, and is always aiming to find the best solution for the customer's requirements.

SAATI sales representatives and engineers understand their customers' applications, working closely with staff in both the production and R&D departments to offer the customized solutions that best meets their needs.

The quality of SAATI's products is backed by the dedication and expertise of SAATI's customer service. Thanks to offices, warehouses, storage and fabrication facilities throughout the world, SAATI provides strong local support, expert responses to customer inquiries, strong engineering capability, technical support and fast delivery around the world.

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Disclaimer

The information provided in this brochure is intended for general informational purposes only. While we strive to ensure the accuracy and reliability of the details about our products, we can not guarantee that all information is complete or up-to-date. Users should request to SAATI for the technical specifications of the products before submitting any purchase order and verify the suitability of products for their intended use as well as products compliance with any applicable laws, based on such use.

We strongly recommend conducting appropriate tests and evaluations to ensure compatibility and safety for specific applications.

SAATI is not responsible for any damage or harm resulting from the improper use, application or handling of the products. Always follow the safety instructions provided with each product and consult relevant guidelines and regulations in your region before use.

All products, drawings, products specifications and data in this brochure are subject to change without notice to improve reliability, function, design or otherwise. Not all products and/or product features may be available in all countries and regions.

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