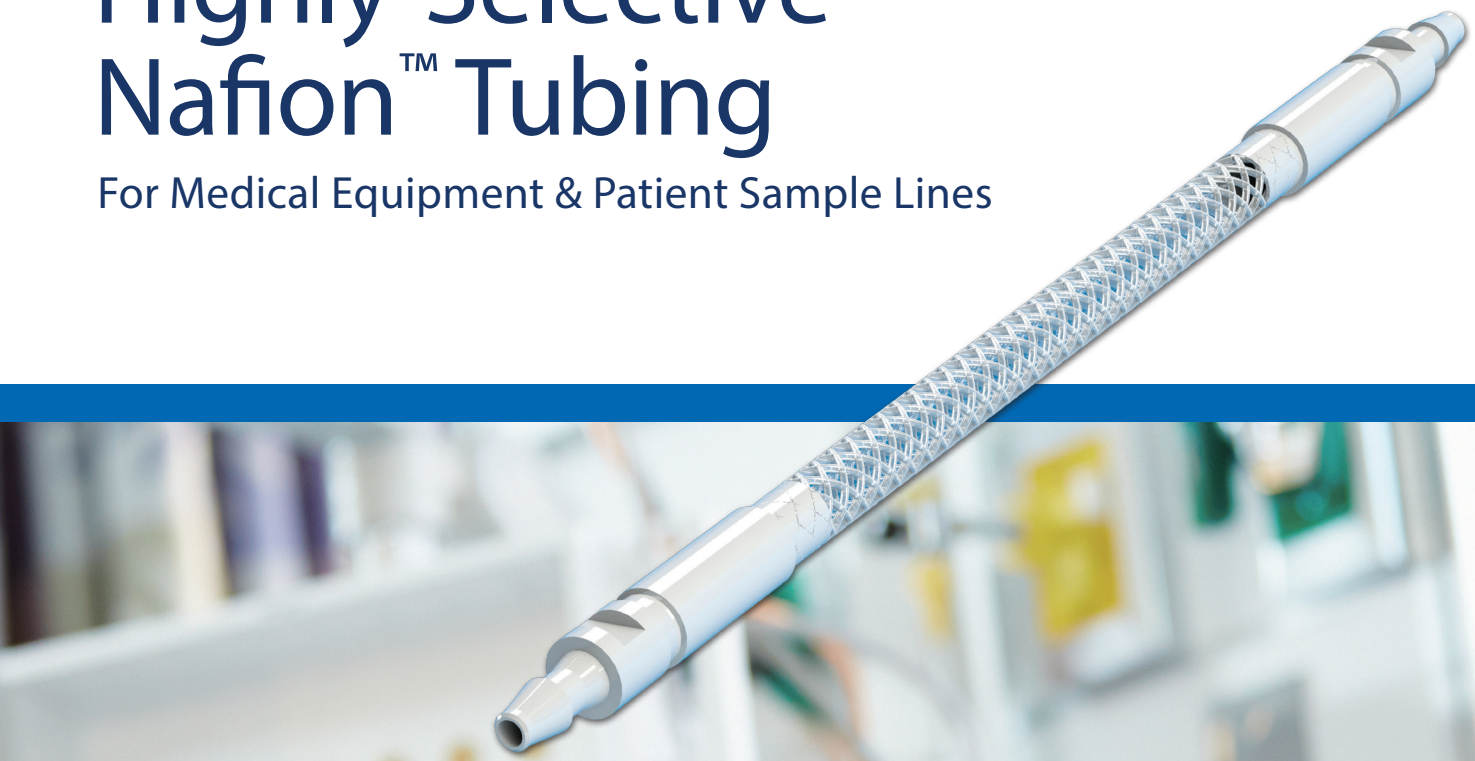
PERMA PURE
PROTECT LIFE

ME Series
Highly-Selective Nafion™ Tubing

For Medical Equipment & Patient Sample Lines





Establish Healing Environment | Protect Equipment | Improve Accuracy

Serving a Wide Range of Applications

Perma Pure ME Series Nafion™ products are an enabling technology for:

CAPNOGRAPHY • ANESTHESIA MONITORING • PULMONARY FUNCTION TESTING
INHALED GAS THERAPY • OXYGEN CONCENTRATORS • ADVANCED WOUND CARE



Establish Healing Environment

For more than forty years, Perma Pure has provided solutions for managing moisture in critical applications related to health and environmental safety. Our medical solutions include highly-selective permeation tubing products which are used by industry leading OEMs of medical diagnostic equipment and patient consumable products. We are proud to partner with our broad and diverse customer base to make the world healthier and cleaner. Our commitment to protect life starts with a focus on quality and partnership with our customers to meet the challenges of a dynamic global marketplace while making the world safer and healthier.



Protect Equipment

Perma Pure's ME tubing products can reduce reliance on, or even eliminate, water traps in patient monitoring equipment where exhaled air creates condensation that can reduce accuracy of measurements, damage equipment, and create patient discomfort. Water traps can fill with liquid, leading to alarms, blocking of sample lines, and damaging expensive and sensitive medical monitoring systems. Our Nafion™-based permeation tubing solutions are simple, cleaner, and healthier – improving accuracy and reducing alarms to support a better environment for practitioners and patients.



Improve Accuracy

Perma Pure is the exclusive manufacturer of Nafion™ tubing, a highly-selective permeation membrane that is uniquely suited for medical moisture management. It can be used to remove moisture from breath samples prior to analysis or for the humidification of therapeutic gases like oxygen and nitric oxide. Our Nafion™-based solutions take advantage of the material's unique properties that allow the removal of water vapor without the loss of any other compounds, such as CO_2 or anesthetic agents. Removal of moisture improves accuracy of IR-based CO_2 measurements by eliminating interference.

Delivering the Perma Pure Medical Advantage for Breath Drying and Gas Humidification

- Fast response time – instantaneous and continuous moisture transfer
- Fully bio-compatible for surface contact with patient skin
- Utilizes Nafion™ membrane tubing technology

BREATH DRYING

- Removes up to 90% of moisture in breath samples
- Improves accuracy of IR-based $EtCO_2$ measurements by eliminating moisture interference
- Highly selective – removes water vapor while retaining sample analytes
- Prevents condensation to protect medical monitoring equipment
- Reduces dead volume in sample circuit when compared with a water trap

GAS HUMIDIFICATION

- Humidifies gas stream using moisture in ambient air
- Introduces moisture while maintaining purity of therapy gas
- Supports greater patient comfort during inhaled gas therapy by keeping mucus membranes moist

Providing the Highest Quality and Reliability

We are a proven supplier to industry-leading medical device OEMs. Our manufacturing process and quality meet the high standards required for medical applications.

- 100% leak and flow testing of dryers and sample lines
- ISO9001 and ISO13485 certified
- FDA registered
- ISO Class 8 cleanroom manufacturing
- Braided polypropylene monofilament protects Nafion™ tubing
- Flexible for easier integration into the module
- Kink-resistant for bending and coiling



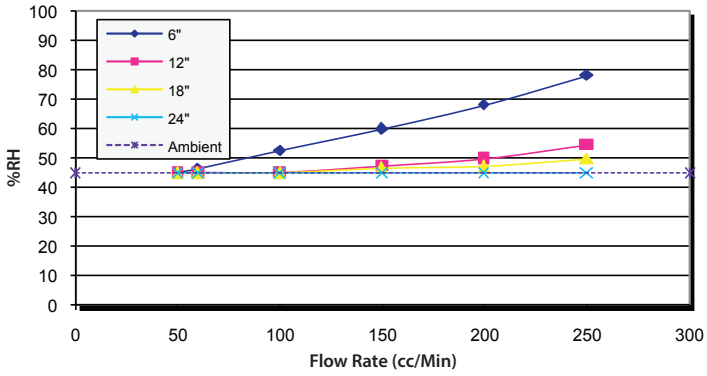
Offering Advanced Assembly Services

More than just tubing – we offer a full array of assembly capabilities to meet your specifications.

- Sample lines with or without dryers
- Custom labeling and packaging
- Design optimization for better flow and moisture exchange
- Standard or custom connectors
- Test capabilities
- Overmolding and solvent bonding of connectors

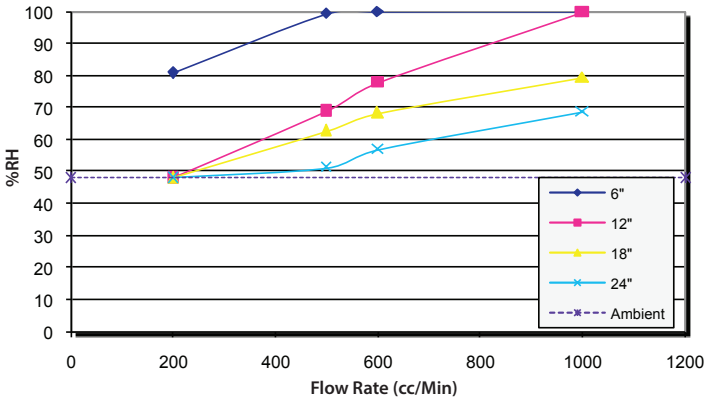
ME-050 Performance

Flow Rate vs Output %RH • Inlet Sample: 100%RH @ 97 deg. F (Saturated Breath)



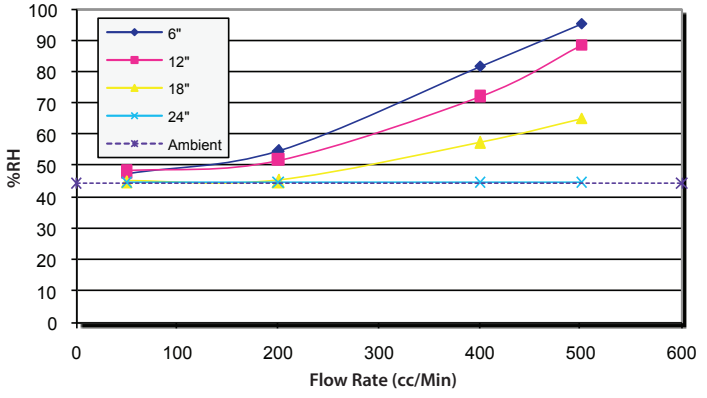
ME-070 Performance

Flow Rate vs Output %RH • Inlet Sample: 100%RH @ 97 deg. F (Saturated Breath)



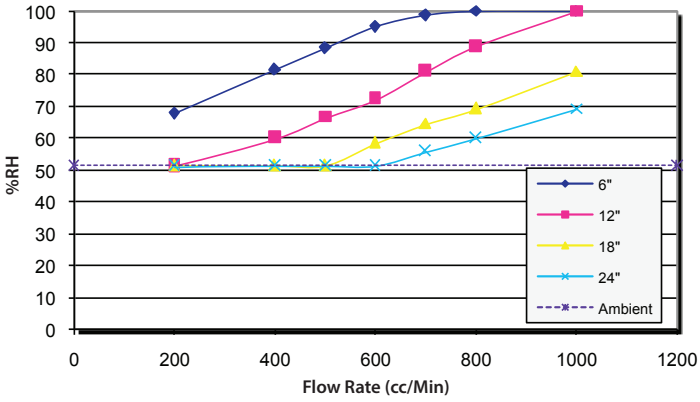
ME-060 Performance

Flow Rate vs Output %RH • Inlet Sample: 100%RH @ 97 deg. F (Saturated Breath)



ME-110 Performance

Flow Rate vs Output %RH • Inlet Sample: 100%RH @ 97 deg. F (Saturated Breath)



PERMA PURE
PROTECT LIFE

A Quality-Driven, Innovative Partner

Perma Pure is a trusted supplier to thousands of customers. Our Nafion™-based solutions have enabled our customers to reduce cost, improve reliability, increase accuracy, and bring new and innovative medical products to market. You can turn to Perma Pure with confidence for proven moisture management solutions, backed by decades of experience, to enable your next breakthrough.

Part #	
ME Moisture Exchanger Series	**ME**
Nafion™ Tubing Size and Typical Sample Flow Rates	
1.07mm ID x 1.35mm OD – samples up to 200cc/min	50
1.32 ID x 1.60mm OD – samples up to 400cc/min	60
1.52mm ID x 1.83mm OD – samples up to 600cc/min	70
2.18mm ID x 2.74mm OD – samples up to 1L/min	110
Standard Dryer Lengths	
6" (15 cm)	6
12" (30 cm)	12
18" (45cm)	18
24" (60 cm)	24
48" (120 cm)	48
End Fittings	
DEHP-free medical tubing attached to each end of ME Series	TT
Thermoplastic tube with nylon barb coupling	BT
Nylon barbed fitting (ME-070 and ME-110 only)	BB
1/16" molded polypropylene barb fitting (ME-050, ME-060 only)	MB
Stainless steel tube in molded polypropylene header	ST
Molded male locking luer fitting (not available on ME-110)	ML
Male locking luer with push-in barb attached with heat shrink	BML
Molded female luer fitting (not available on ME-110)	FL
Female locking luer with push-in barb attached with heat shrink	BFL
Molded male slip luer fitting (not available on ME-110)	MS
With 1/8" stainless steel compression fittings (ME-060 only)	COMP2
Molded headers for 1/4" compression fittings (ME-110 only)	COMP4









ME	050	12	BB
Series	Tubing	Length	Fittings

Perma Pure LLC • A Halma Company • info@permapure.com • www.permapure.com

Lit. No.: Medical-Bro-1610 Supersedes: Medical-Bro-1510
©2016 Perma Pure LLC. All rights reserved. Speculations subject to change.
Nafion™ is a registered trademark of The Chemours Company.