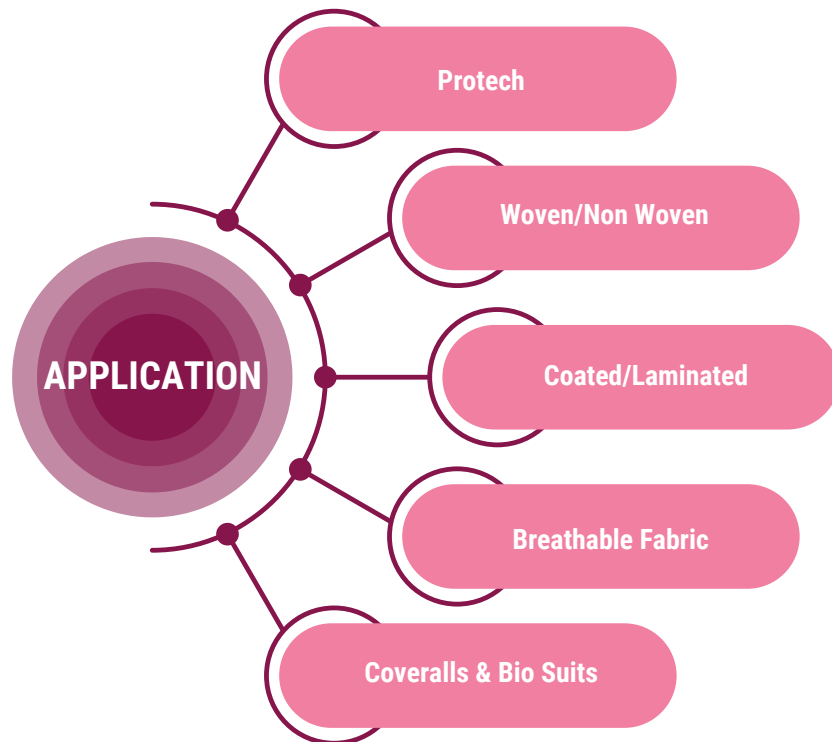


At M19-Material Intelligence Lab, Baroda, we create and deliver game changing Textile Testing Technologies enabling you to develop the fabric of the future, enhance your competitive market position, supported by our world leading characterization products, lab testing and certification division.

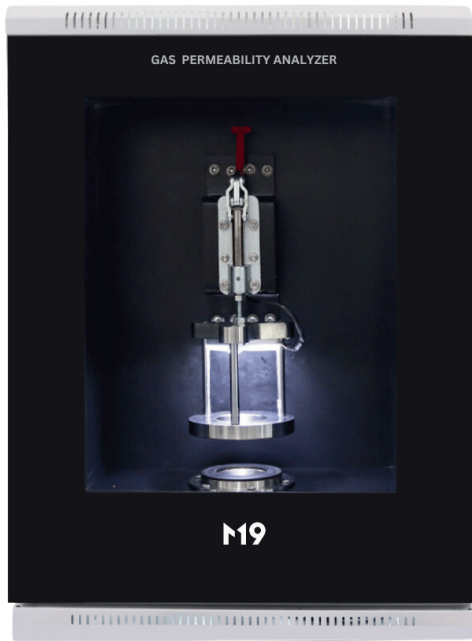
Textiles play a crucial role in our daily lives, serving as the foundation of clothing, medical supplies, and various industrial applications. The quality and functionality of textiles are determined by a range of properties, including Fabric Pore Size, Permeability, Porosity, Hydrostatic Pressure Head, Synthetic Blood Penetration, and Water Vapor Transmission. Accurate measurement of these properties is essential to ensure that textiles meet their intended purposes and adhere to industry standards. In this guide, we will explore advanced laboratory instruments designed for precise testing of these textile properties, shedding light on the technology and methodologies behind these critical analysis.

HOW WE HELP?

- Design & Manufacture Lab Instruments
- Lab Testing Services
- Identify & Rectify Failures
- Improve Product Performance
- Ensure Your QA/QC Requirements







PRODUCT PORTFOLIO



GAS PERMEABILITY ANALYZER

Gas Permeability Analyzer (Model: GP-100) series is vital for measuring the permeability of gasses through fabrics. The GP-100 device utilizes a constant airflow directed vertically through fabrics then pressure difference across the specimen is measured, and the gas permeability of the fabrics can be determined accurately in Darcy, Frazier, or Gurley units. The GP-100, user-friendly with





Non-Destructive Testing, is ideal for R&D and QA/QC, crucial in product development for optimizing material selection and design for breathability, moisture management, and thermal regulation.

-  Standard : ASTM D737-18, ISO 9237, ISO 7231, DIN EN ISO 9237, JIS L1096, GB/T5453, GB/T13764
-  Test Range : 0-10,000 CFM
-  Test Duration : 5-6 minutes
-  Precision : 0.15% of Reading

Application: Woven/Non-Woven, Spunbond, Meltblown, Protective Clothing, Sports Textiles, Geotextiles, Medical Fabrics, PPE Coveralls, NBC suits.

DIFFUSIONAL PERMEABILITY ANALYZER

The Diffusion Permeability Analyzer (Model: DP-50) is an advanced instrument employed to quantify the permeability of fabrics to gasses, vapors, or small molecules via diffusion process. This property holds significance in diverse applications, including protective clothing, filtration, and industrial textiles. The vacuum method, with differential pressure technique, measures the diffusional permeability of fabrics based on induced pressure changes as testing gas permeates through the fabric. This analyzer aids manufacturers and researchers in evaluating and refining the performance of textile materials by offering precise measurements of diffusional permeability.

-  Standard : ISO 15105-1, ASTM D1434, JIS K 7126, GB 1038
-  Test Range : 0.05-50,000 $\text{cm}^3/\text{m}^2\cdot 24\text{h}\cdot 0.1\text{MPa}$
-  Test Duration : 60 minutes
-  Precision : 0.001 $\text{cm}^3/\text{m}^2\cdot 24\text{h}\cdot 0.1\text{MPa}$

Application: Composite Films, High Barrier Materials, Protective Clothing, Packaging, Laminated and Coated Textile.







PRODUCT PORTFOLIO

MICROPORE ANALYZER







The advanced Fabric Micropore Analyzer (Model: MPA-100) utilizes Liquid Displacement and Capillary Flow Porometry techniques to determine absolute and nominal micron ratings. This device is specifically tailored for various types of microporous fabrics, making it an ideal choice for evaluating the performance of a wide range of textile products and providing accurate and detailed insights into fabric pore size. It is an indispensable tool for the technical textiles Industry, allowing manufacturers and researchers to develop and tailor high-performance textiles, maintain quality standards, and meet regulatory requirements.

-  Standard : ASTM F316, ASTM D6767
-  Test Range : 0.1-100 microns
-  Test Duration : 2-3 minutes
-  Precision : 0.01% F.S.

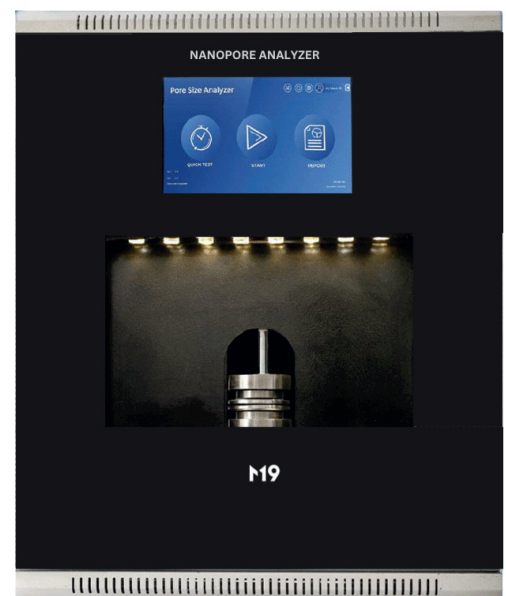
Application: Geotextiles, Medical Textiles, Fabric Filters, Woven/Non-Woven Fabrics, Meltblown Fabrics, Spunbond Fabrics, CBRN Suit, Coated and Laminated Fabrics.

NANOPORE ANALYZER

The Nanopore Analyzer (Model: NPA-500) distinguishes itself as a state-of-the-art Pore Size Analyzer, equipped with remarkable capabilities. Its advanced technology, leveraging High Pressure Capillary Flow/Gas-liquid Porometry method for characterizing the Pore Size of coated/laminated, ensures high efficiency in characterizing the pore sizes of fabric media. Tailored specifically for nanoporous textile media, this device becomes an optimal solution for assessing the performance of coated/laminated fabric media, providing accurate pore size of fabrics.

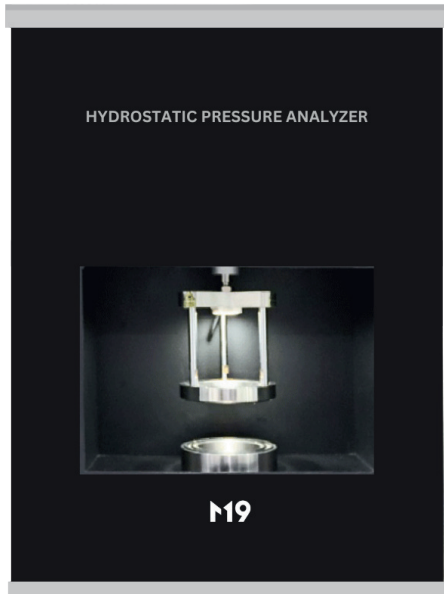
-  Standard : ASTM F316, ASTM D6767
-  Test Range : 0.01-10 microns
-  Test Duration : 0-3 minutes
-  Precision : 0.01% F.S.

Application: Medical Textiles, Membranes, Protective Textiles, Fabric Filters, Coated and Laminated Fabrics, PPE Coveralls, Bio Suits, NBC suits.







PRODUCT PORTFOLIO

HYDROSTATIC PRESSURE HEAD ANALYZER



The Hydrostatic Pressure Analyzer (Model: HPA-50) plays a crucial role in the technical textiles Industry by assessing the waterproofing or water-resistant characteristics of fabrics and determining their appropriateness for diverse applications. Our HPA-50 device is specifically crafted to assess a fabric material's capacity to withstand the penetration of water under either static or dynamic force, gradually increasing until a minimum of three points of leakage are identified. The HPA-50 is a versatile tool in textiles industry, contributing to quality assurance, product development, and compliance with industry standards.





-  Standard : AATCC 127, ISO 811, ASTM D751, EN 20811, GB/T 4744
-  Test Range : 0-3000 mbar
-  Test Duration : 1 minute
-  Precision : $\pm 0.5\%$ of display value

Application: Coated/Laminated Fabrics, Sports Textiles, Rainwears, Medical Textiles, Automotive Textiles, Marine Textiles, Geotextiles.

SYNTHETIC BLOOD PENETRATION ANALYZER

The Synthetic Blood Penetration Analyzer (Model: SBP-50) is utilized to assess the resistance of various fabric materials, including protective clothing and medical textiles, against the penetration of synthetic blood or other fluids. This device evaluates the material's capability to impede the passage of liquids and is commonly employed to appraise the barrier properties of materials in healthcare settings, ensuring protection against blood borne pathogens and other contaminants. This device typically gauges the pressure necessary for fluid penetration, supplying valuable data for material selection and quality control in textiles Industries.



-  Standard : ASTM F1862, ASTM F1670, ISO 16603, ISO 22609
-  Test Range : 0-50KPa
-  Test Duration : 0-5 minutes
-  Precision : $\pm 0.5\%$ FS.





Application: Medical Textiles, Face Masks, Disposable Coveralls, Protective Clothing, Bio Suits, Laboratory Coats.

PRODUCT PORTFOLIO

MOISTURE VAPOR TRANSMISSION ANALYZER







The Moisture Vapor Transmission Rate Analyzer (Model: MVTR-50) equipment employs Gravimetric Analysis, specifically following the ASTM E96 upright cup method, for measuring the Moisture Vapor Transmission Rate (MVTR) of fabric materials. The MVTR is ascertained by assessing the increase in moisture vapor mass across the specimen over a given period. Using this device values, permeance and permeability are subsequently calculated. MVTA-50 plays a crucial role in ensuring the quality, performance, and compliance of technical textiles.

-  Standard : ASTM E96, JIS L 1099, BS EN ISO 12572
-  Test Range : 0.1-9000 g/m²/day
-  Test Duration : 60 minutes
-  Precision : 0.1% F.S.

Application: High Altitude Clothing, Military Suits, Medical Textiles, Sports Textiles, Smart Textiles, PPE Coveralls.

PARTICULATE FILTRATION EFFICIENCY ANALYZER

The Particulate Filtration Efficiency Analyzer (Model: PFE-50) assesses the ability of textile materials to filter out airborne particulate matter. Particulate Filtration Efficiency (PFE) is calculated by measuring the ratio of upstream to downstream concentrations of aerosol particles in a controlled environment. PFE-50 is a critical tool for ensuring the effectiveness of fabrics in filtering out airborne particulates. By providing quantitative data on the particulate filtration efficiency of materials, PFE-50 contributes to the development, QA/QC, and standardization of textile material across various industries, ensuring the safety and effectiveness of the final products.

-  Standard : ASTM F2100, ASTM F2299, ISO 26463, ISO 14644, ISO 16890
-  Test Range : 0.3-10 microns, flow rate 1-100 liters/min
-  Test Duration : 5-10 minutes
-  Precision : 0.01% of F.S.

Application: Woven/Non-Wovens, Fabric Filters, Medical Face Masks, Spunbond/Meltblown media, Personal Protective Equipment (PPE), Cleanroom Garments.



EASY 3- STEP PROCESS TO ACCESS M19 TESTING SERVICES

Step 1: Sample Preparation

1.1 Select the Sample: Choose representative sample from your batch for testing.

1.2 Package Your Sample: Pack your sample securely to prevent any damage during transit. Each sample should be individually wrapped and labeled to ensure they can be easily identified.

Make sure to include the Sample Specification Sheet detailing important information, such as the type of fabric, manufacturer, model, and any specific tests requested.

Step 2: Sample Dispatch

2.1 Select a Reputable Courier: Choose a reliable courier service that offers tracking and ensures your package will arrive safely at the lab.

2.2 Address and Dispatch: Clearly write the laboratory's address on your package and dispatch it via your chosen courier.

M19 Lab

Atten: Dr. A.S Dey

(Porelab Scientific Pvt Ltd)

801/802 K10 Grand,

Sarabhai Campus,

Vadodara, Gujarat-390007

Ph- +91 8140308833

2.3 Share Tracking Information: Share the courier tracking number with the lab so they can anticipate the arrival of your samples.

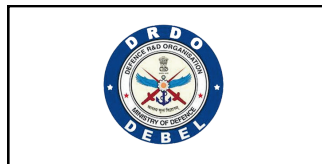
Step 3: Lab Confirmation and Follow-up

3.1 Arrival Confirmation: Upon receipt of your samples, M19 lab team shall confirm their arrival and condition.

3.2 Lab Testing: The lab will then perform the requested tests. The timeline for this can vary depending on the complexity and volume of the tests.

3.3 Results and Report: Once testing is complete, M19 lab team will compile a detailed report and share the results with you. This may be done via email, through a client portal, or mailed as a hard copy, depending on the lab's practices and your preferences.

CLIENTS



MISSION

Why we exist; why the world will be different because we are here?

The mission of M19 Team is to provide high precision insights in the Nanoscale World with seamless coordination and provide advance material characterizations through unrivalled education, research and outreach in the many diverse industry we serve.

VISION

Who we want to become; what we want to achieve or create?

The M19 lab's vision is to continue to grow and challenge convention through our pioneering spirit, scientific advancements, forward thinking leadership, collaborative approach to provide exceptional material testing support.

BRAND PROMISE

The net benefit we deliver to those we serve.

M19 lab is the choice for ground-breaking material research. Our unrivalled education, translational research laboratory, custom instruments ensure that we deliver the best laboratory support from everyday products to testing of the most serious and complex material products.

FAQ's

✓ **What is the role of Pore Size Measurement in Technical Textiles?**

Fabric Pore Size is a vital parameter that influences a textile's breathability, filtration capabilities, and comfort. Advanced laboratory instruments employ various techniques to determine Fabric Pore Size accurately. One commonly used method is the Capillary Flow Porometry (CFP), which utilizes the intrusion of wetting liquid into the pores of a fabric under controlled pressure. The resulting data allows researchers and manufacturers to characterize the pore size distribution, which is crucial in optimizing fabric performance for specific applications. By quantifying fabric pore size, these instruments aid in the development of textiles with improved moisture management, comfort, and filtration properties.

✓ **What is the importance of Permeability and Porosity Analysis?**

Textile permeability and porosity are essential factors in applications such as filtration, wound dressings, and protective clothing. Advanced lab instruments employ techniques like the Darcy, Gurley method and the Frazier method to measure air permeability and porosity, respectively. These methods involve measuring the air flow rate through a fabric under controlled conditions. Accurate determination of permeability and porosity enables manufacturers to design textiles with tailored breathability and filtration characteristics, ensuring that the material meets the stringent requirements of various industries.

✓ **What is Hydrostatic Pressure Head Testing?**

Hydrostatic pressure head testing is critical for evaluating the waterproof capabilities of textiles, such as rainwear, outdoor gear, and medical drapes. Specialized instruments subject the fabric to a steadily increasing water column until water penetration occurs.

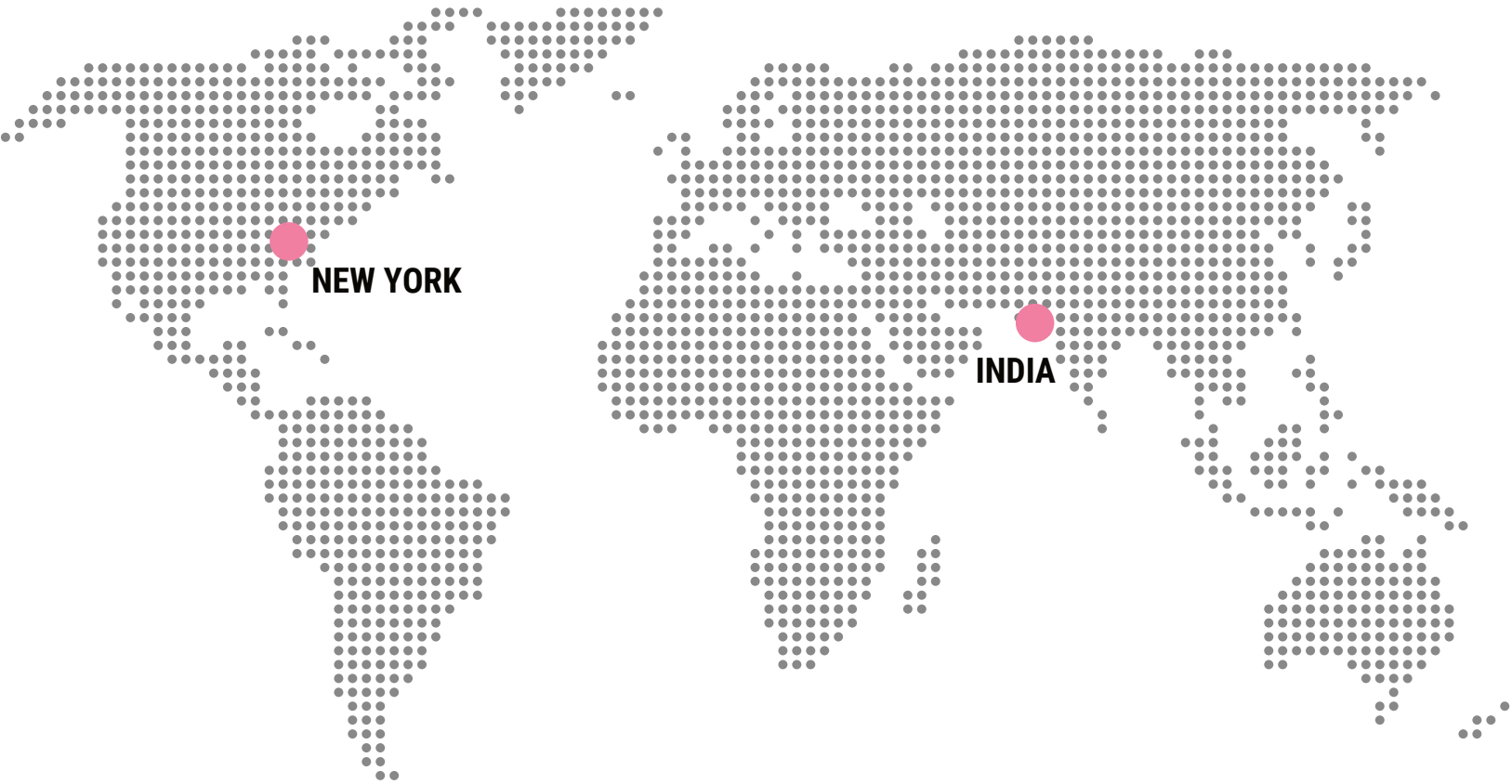
A Micropore Analyzer, also known as a Pore Size Analyzer or Capillary Flow Porometer, is Scientific Laboratory Device used to determine the bubble point (absolute micron size), MePore (nominal micron rating), and full pore size distribution properties of various porous materials. It is commonly employed in various fields such as Filtration & Separation Technical Textile, Membranes Technology, Thin Films etc.

✓ **What is Synthetic Blood Penetration and Water Vapor Transmission Analysis?**

In medical and protective clothing, textiles must offer resistance to fluid penetration, such as synthetic blood, while still allowing the transmission of water vapor to maintain wearer comfort. Advanced laboratory instruments are designed for both Synthetic Blood Penetration Testing and Water Vapor Transmission Analysis. The former assesses a textile's ability to withstand liquid penetration, ensuring it meets safety standards in healthcare and other fields. The latter measures the rate at which water vapor passes through a fabric, a critical parameter for textiles used in breathable and moisture-wicking garments. These advanced tests help ensure that textiles provide both protection and comfort, enhancing their performance in various demanding environments.

✓ **What is the benefits of M19 Lab Products?**

M19 Lab Products are fully automated and digital instruments Advanced AI based software control program is provided for easy operation and test report generation. Also, M19 lab team offers better after sales support, AMC. Since the products are designed and manufactured in India.



CONTACT US



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