M19 | MATERIAL INTELLIGENCE LAB

Industry Outlook 2025 AWARD

TEXTILE TESTING INSTRUMENTS

Textiles power our world-shaping clothing, medical products, and vital industry solutions. Their quality and performance hinge on key factors like pore size, permeability, hydrostatic pressure head, diffusional permeability, filtration efficiency, and water vapor transmission. Accurate measurement is essential for meeting industry standards and functional needs.

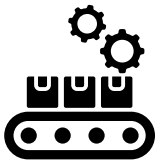
At M19 Material Intelligence Lab, Vadodara, we design and deliver innovative textile testing technologies that enables you to develop next generation of performance fabrics, strengthen your competitive edge, and benefit from our world-class characterization instruments, lab testing, and certification services.

M19 design and manufactures fully automated & digital instruments indigenously, with expertise and focus on application & industry specific customization to achieve ultra-high precision levels.

TEXTILE TESTING PRODUCT PORTFOLIO

- GAS PERMEABILITY ANALYZER
- DIFFUSIONAL PERMEABILITY ANALYZER
- MICROPORE ANALYZER
- NANOPORE ANALYZER
- HYDROSTATIC PRESSURE ANALYZER
- SYNTHETIC BLOOD PENETRATION ANALYZER
- MOISTURE VAPOR TRANSMISSION ANALYZER
- PARTICULATE EFFICIENCY ANALYZER
- BURSTING STRENGTH ANALYZER

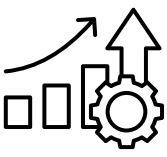
HOW M19 IS ASSISTING ORGANIZATIONS?



Design & Manufacture Lab Instruments

Lab Testing Services

Identify & Rectify Failures



Improve Product Performance

Ensure your QA/QC Requirements

CORE EXPERTISE

Our advanced textile testing instruments enable manufacturers and innovators to rigorously evaluate the key properties of a wide range of technical fabrics. Our technologies offer precise insights into permeability, pore structure, barrier performance, filtration capacity, moisture management, gas and vapour permeation, mechanical integrity, and other essential characteristics.

M19 empowers organizations across technical textile sectors to optimize product design, validate quality, accelerate R&D, and meet stringent global standards. From protective clothing and medical textiles to industrial filters, geosynthetics, and sports fabrics, M19's solutions deliver the reliability, accuracy, and innovation needed to excel in competitive markets.

PRODUCT PORTFOLIO

GAS PERMEABILITY ANALYZER

Gas Permeability Analyzer (Model: GP-100) series is vital for measuring the permeability of gases through fabrics. The GP-100 device utilizes a constant gas flow directed vertically through fabrics followed by measurement of pressure difference across the specimen which helps determine the gas permeabiity of the fabrics in $l/m^2/s$, $cm^3/cm^2/sec$ or $ft^3/ft^2/min$. The GP-100 is user-friendly with Non-Destructive Testing, and 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 : 1-2 minutes

Precision : 0.15% F.S.

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

DIFFUSIONAL PERMEABILITY ANALYZER

The Diffusional Permeability Analyzer (Model:DP-50) is an advanced instrument employed to quantify the gas barrier property of fabrics to gases, vapors, or small molecules via diffusion process. This property holds significance in diverse applications, including protective clothing, laminated coated fabric 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 $cm^3/m^2 \cdot 24h \cdot 0.1MPa$

Test Duration : 60 minutes

Precision : 0.001 $cm^3 /m^2 \cdot 24h \cdot 0.1MPa$

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

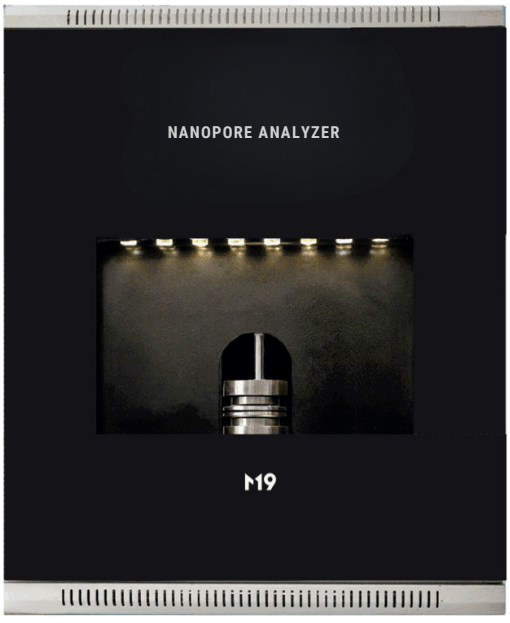
Test Duration : 5-10 minutes

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

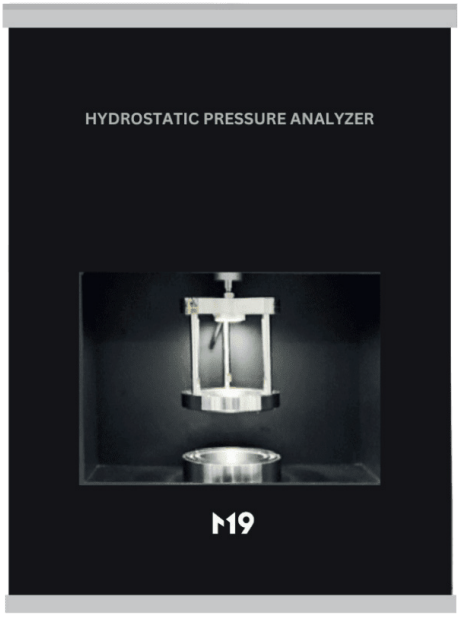
Test Range : 0.01-10 microns

Test Duration : 5-10 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 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 : ±0.5% F.S.

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 : 0-50 kPa

Test Duration : 3-5 minutes

Precision : ±0.5% F.S.

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. MVTR-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 based filters 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 : ISO 29463, ISO 14644, ISO 16890, ASTM F2100, ASTM F2299

Test Range : 0.3-10 microns, flow rate 0-3 liters/minutes

Test Duration : 3-45 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.

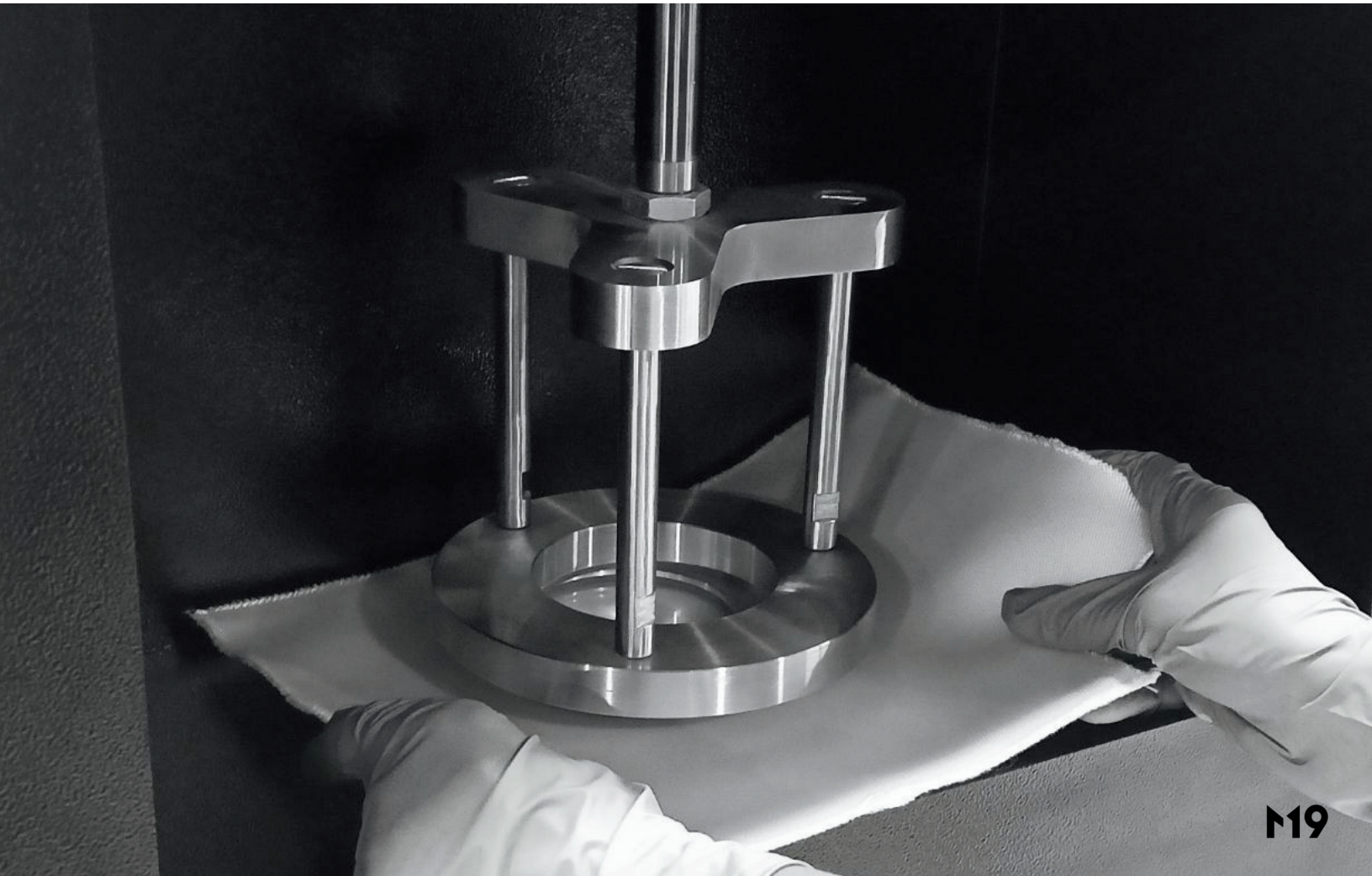
PRODUCT PORTFOLIO

BURST PRESSURE ANALYZER

The M19 BPA-50 Burst Pressure Analyzer is engineered to precisely measure the maximum force required to rupture a fabric using hydrostatic pressure. Utilizing a robust rubber diaphragm, this advanced instrument determines the bursting strength of fabric samples by applying hydrostatic pressure in a controlled manner. Results are delivered in kg/cm², ensuring consistent and reliable data for quality assurance and research.

- Standard : ASTM D3786, GB/T7742, ISO13938
- Test Range : 0-10 Mpa
- Test Duration : 1-2 minutes
- Precision : 0.1% F.S.

Application: Protective Clothing Fabrics, Medical Barrier Textiles, Geo-Textiles, Industrial Filter Clothes, Upholstery Fabrics, Automotive Seat Cover.



NEW COGNITIVE SOFTWARE

Get unprecedented data visualization using new M19 software control program and test report program. Experience the power of A.I. based cognitive software control program that virtually eliminated user bias throughout the data acquisition process and data interpretation, redefining the way data is generated and consumed by your team. Microprocessor controlled auto-calibration feature permits device easy system re-calibrations.

SECURE CLOUD BACKUP | SCIENTIFIC DASHBOARD | DYNAMIC REPORT | COGNITIVE SOFTWARE

LABORATORY TESTING DIVISION

3 EASY STEPS TO ACCESS M19 LAB TESTING DIVISION

Step 1: Sample Preparation

1.1 Select the Sample: Choose a representative sample from your batch for testing. Avoid the selvedge area.

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 easy identification.
Include the sample's specification sheet detailing important information such as the fabric type and material, manufacturer details, and any specific tests or testing standards requested.

Step 2: Sample Dispatch

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

2.2 Address and Dispatch: Clearly write the laboratory's address on your package, then dispatch it using 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 95101 64036

2.3 Share Tracking Information: Provide the courier tracking number to our lab so we can anticipate the arrival of your samples.

Step 3: Lab Confirmation and Follow-up

3.1 Arrival Confirmation: Upon receipt of your samples, the M19 Lab team will confirm their arrival and condition.

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

3.3 Results and Report: Once testing is complete, the 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.

OUR CLIENTELE

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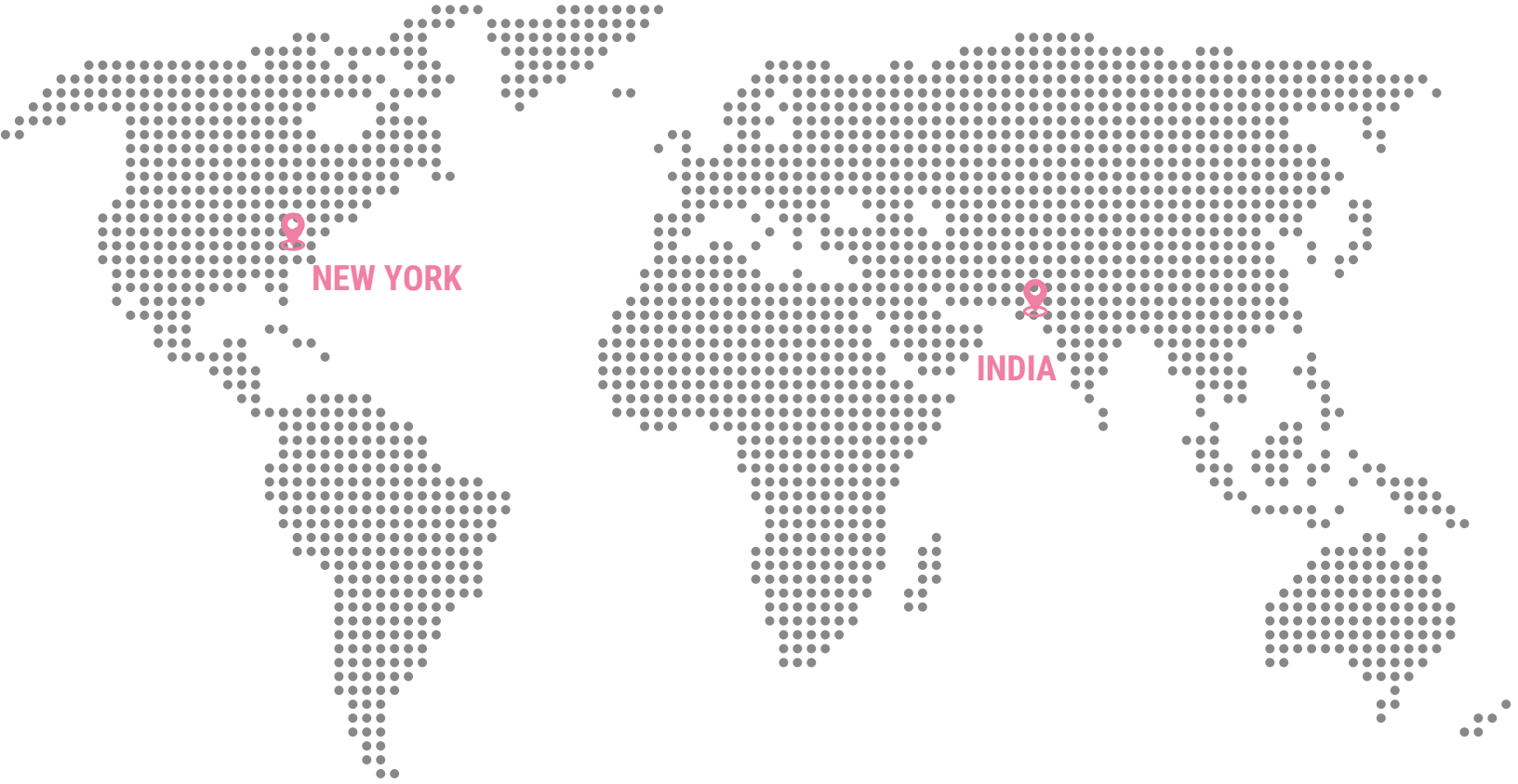

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