Porous Materials, Inc.
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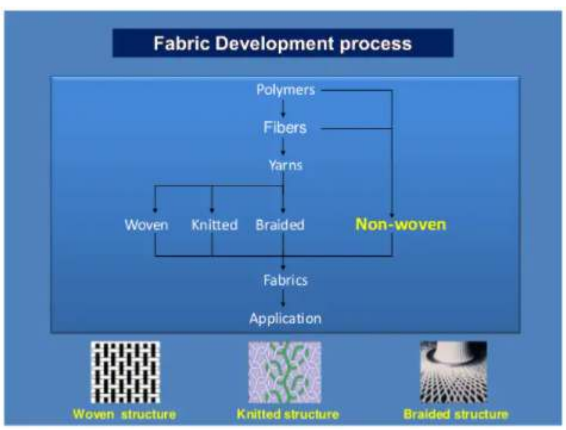
NON-WOVEN INDUSTRY

Nonwoven fabrics are broadly defined as sheet or web structures bonded together by entangling fiber or filaments (and by perforating films) mechanically, thermally or chemically. They are flat or tufted porous sheets that are made directly from separate fibres, molten plastic or plastic film. They are not made by weaving or knitting and do not require converting the fibres to yarn. Typically, a certain percentage of recycled fabrics and oil-based materials are used in nonwoven fabrics. The percentage of recycled fabrics varies based upon the strength of material needed for the specific use. In addition, some nonwoven fabrics can be recycled after use, given the proper treatment and facilities. For this reason, some consider non-woven a more ecological fabric for certain applications, especially in fields and industries where disposable or single use products are important, such as hospitals, schools, nursing homes and luxury accommodations. Pore Size of constricted pore as shown in fig1 is important parameter as the separator must have must have good insulation to prevent short circuit between positive and negative contacts or prevent short circuit caused by burrs, particles and dendrites

Nanofiber nonwovens are finding increasing applications in filtration industry particularly in processes involving biotechnology. For such applications, pore volume is very important. Through pore diameter, pore throat diameter and permeability are also important pore structure characteristics. Nanofiber mats are normally sensitive to pressure and are often brittle.



APPLICATION OF NON-WOVENS:

- Automotive interiors
- Home furnishing nonwovens
- Heat transfer printing material
- Filter media
- Cable wrapping
- Building material
- Tennis Court Surfaces
- Blankets Automotive Carpeting
- Space Shuttle Exterior Tiles
- Marine Hulls, Headliners
- Shoe FeltsGeo-textile
- Roofing material
- Industrial reinforced & Backing material
- Automotive Insulation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We at PMI Analytical Testing Services, are committed to helping you obtain the pore structure information you need. Because there are multiple techniques and instruments, it is critical at the onset to identify the appropriate method of measurement. We begin by discussing your application with you, understanding your needs, and providing you the solution that meets your needs. While PMI provides you with a detailed report, our application engineers are always available to discuss and help interpret your results.

PMI's Analytical Testing Services Division can accommodate a wide variety of samples, materials, and shapes. Sample size and consistency requirements vary with the test and material. For a large number of samples, special test conditions, or individual assistance, please contact PMI. We can analyze your samples and return your results to you (hard copy, on a disk, email, fax, or USPS) in as little as 1-2 business days.

Following are the types of Tests in our premises:

- Capillary Flow Porometery
- Liquid Liquid Porometery
- Water Intrusion Porosimeter

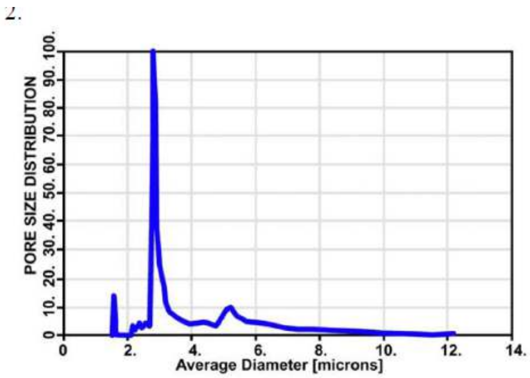
PMI testing services include measurement for:

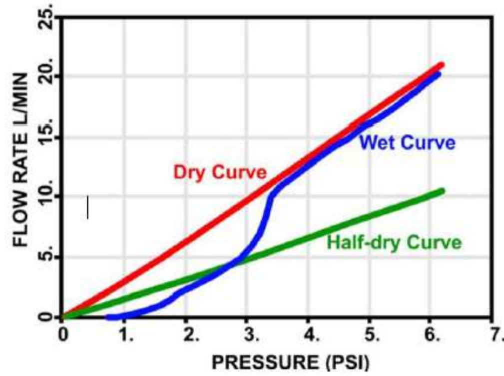
- Water entry pressure
- Pore size
- Pore size distribution
- Bubble point

All these mentioned above can be tested using Capillary Flow Porometery, Liquid Liquid Porometery, Water Intrusion Porosimetery.

In this method, the pores of the sample are filled with a wetting liquid, the liquid is emptied by a pressurized gas permitting gas to flow through the empty pores. The differential pressure required to empty a pore of diameter D is given by Equation 2 [1, 4]. It shows that the largest pore is emptied at the lowest pressure and initiates gas flow. With increasing pressure smaller pores are emptied and gas flow increases. The differential pressures and gas flow rates through dry and wet samples are measured. In the dry sample, the flow rate increases with increase in pressure. In case of the wet sample, initially there is no flow because all the pores are filled with the liquid. At a certain pressure the gas empties the largest pore (Equation 2) and gas flow starts through the wet sample. With further increase in pressure smaller pores are emptied and the flow rate increases until all the pores are empty and the flow rate through the wet sample is the same as that through the dry sample. This is schematically illustrated in Figure 5. The half-dry curve in this figure is computed from the dry curve to yield fifty-percent of flow through dry sample at the same pressure. The dry and wet curves yield the bubble point, the mean flow pore diameter, flow distribution and pore fraction distribution of through pores. The dry curve yields gas permeability and envelope (through pore) surface area. Liquid flow rate gives liquid permeability.

ATTACHED BELOW IS THE REPORT TESTED PMI MACHINES





If you have any requirement then you can contact us on info@pmiapp.com , krishna@pmiapp.com or phone number +001 6072802357, or visit our website www.pmiapp.com